Academics

Changing TIMES

When Georgia Tech opened in 1888, it was truly a technical institute with mechanical engineering its only degree. Since that time, numerous degree offerings were added, but the technical emphasis remained. In recent years, an effort was made to broaden the scope of the academic offerings at Tech. This resulted in the creation of programs in subjects as varied as international affairs and science, technology, and culture. However, when a new major was added, its technical aspects were emphasized to take advantage of Tech's strengths.

A student assistant's books are stacked in the window of his office in the Chapin Building. Older buildings on campus were often adapted for use as students' offices. *Photo by David Pauli.*

Redesigning Old Systems

Changes allow for the streamlining of the administrative structure

This past summer, the Board of Regents asked for changes to the central administrative structure of Georgia Tech. The changes were made in order to reduce the number of people reporting to the president and consolidate the business operations of Tech.

Dr. Ward O. Winer, regents Professor and Director of the School of Mechanical Engineering, expressed hope that these recommended changes would allow the business aspects of Georgia Tech to become more efficient. He also stated that the restructuring would allow the president to give attention to more important matters by reducing the number of people reporting to him.

Originally, there were about thirteen to twenty-one people reporting directly to the president. The major change proposed by the Board of Regents was the formation of four principal vice presidents. The four positions established were: Executive Vice President, Senior Vice President of Administration and Finance, Vice President of Student Affairs, and Vice President of External Affairs.

The Executive Vice President, Michael E. Thomas, was proposed to be responsible for Continuing Education, Cooperative Education, Georgia Tech Lorraine, the Georgia Tech Research Institute, the Office of Information Technology, the Library, the Registrar's Office, and the Economic Development Institute.

James W. (Bill) Ray, the Senior Vice President of Administration and Finance, headed the Administration Information Services, Auxiliary Services, Budget Execution and Control, Facilities and Physical Plant, Financial Management, Grants and Contracts, Accounting, Human Resources, Internal Auditor, the legal department, Olympic Planning Office, purchasing, and security.

> *"The changes in business operations have been positive."*
>
> *- Dr. Ward O. Winer*

The Vice President of Student Affairs, Roger Wehrle, was given charge of Admissions, Career Services, Counseling, FASET, Health Services, Ombudsman, OMED, Recruitment, and Student Financial Affairs.

James M. Langley, Vice President of External Affairs, was recommended to head Alumni Affairs, Corporate Relations, Development, Government Relations , Public relations, Communications, and University Partnerships. The Alumni Association, GT Foundation, and the National Advisory Board were also charted to report to Langley.

by Ina Heung

Roger Wehrle takes a phone call in his office. His position as Vice President of Student Affairs included many responsibilities. *Photo by David Pauli.*

The Swann building is one of the older buildings on campus. Even today, most administrative decisions are made in these areas of campus. *Photo by Pei-Wen Wen*

James M. Langley
Vice President
External Affairs

Michael E. Thomas
Executive
Vice President

James W. Ray
Senior Vice
President
Administration
and Finance

Roger Wehrle
Vice President
Student Services

Dr. Harry Downs
Acting Chancellor
Board of Regents of the University System of Georgia
Office of the Chancellor
244 Washington Street, S.W.
Atlanta, Georgia 30334

January 11, 1994

Dear Dr. Downs:

I am now in my seventh year as President of the Georgia Institute of Technology. When I accepted the Board of Regents' offer to become President of Georgia Tech, I did so in the belief that Georgia Tech represented some unique opportunities and challenges and that I could make a difference. In reviewing the commitments made to the Georgia Tech community and the citizens of the State of Georgia in my inaugural address, I find that significant progress has been made on every front - in most cases, Georgia Tech is performing at a level well beyond even my admittedly over-aggressive expectations.

For the second year in a row Georgia Tech's fall entering freshman class has had SAT scores higher than those of freshman at any other public research university – better than Virginia, Berkeley, or Michigan. We are awarding nearly three times as many Ph.D. degrees now as we were in 1988. Over the past five years, Georgia Tech junior faculty have been awarded more New Young Investigator Awards by the National Science Foundation than any other university in America, public or private. Our faculty membership in the National Academy of Engineering has increased five-fold. We now have perhaps the strongest group of academic deans in the country, which when coupled with Dick Truly in GTRI makes for as strong a group of line managers as I know of. Georgia Tech's volume of sponsored research has nearly doubled during a time when federally sponsored R&D has been flat or declining and our reliance on DoD has dropped from roughly 75% to 55%. Our leadership in the establishment and operation of the Georgia Research Alliance is but one indicator of the much stronger and direct contribution Georgia Tech is making to economic development in the State and nation. Georgia Tech's aggressive leadership in increasing the successful participation of minorities in engineering and science, at the undergraduate student, Ph.D., and faculty levels is widely acknowledged as the very best in the nation. Our intercollegiate athletics program is successful and a very positive contributor to the institution. Between 1987 and 1996 we will have built and opened more student facilities than were established between 1885 and 1987. Plus we have added three new colleges and numerous degree programs, nearly all of which are wildly successful. Finally, through the Center for Education in Science, Math, and Computing, we have re-energized the foundation of a technological, undergraduate education and have begun to play a major role in K-12 math and science education in Georgia. All of this has been accomplished without a significant increase in the level of public funding.

It is with considerable satisfaction that I tender my resignation as President of Georgia Tech, effective June 29, 1994, in accordance with Section 203.0204 of the Regents Policies and Procedure Manual. I do so at the present time so that the Board can begin a national search for a new president. Please convey to the Board my wish not to be considered for re-appointment at the February Board meeting. It is my understanding that the Regents, following their policies in Section 203.0204, will grant me two years leave with pay at the January Board meeting tomorrow. Between now and June 29, I will do everything possible to assist the Board and to leave behind an institution ready in all respects to move to the final plateau among public research universities in this country.

I wish to express my deep appreciation to the members of the Board of Regents under whom I have served for their support and contributions. I especially wish to thank former Chancellor Propst, former Executive Vice Chancellor Spence, current and former Regents' staff, and you for the opportunity to serve the State University System and the students of Georgia Tech.

Sincerely yours,

John P. Crecine
President

End Of An Era

Crecine resigns after six years as Georgia Tech president

Embattled Tech President John Patrick Crecine publicly resigned January 11, ending months of speculation. He had previously submitted his letter of resignation to outgoing Chancellor H. Dean Propst of the Board of Regents on December 22, but the resignation was not officially announced until the January Board of Regents meeting. Crecine will step down from the presidency effective June 29, which was the last day of his contract for 1993–94.

However, Crecine will retain his position as a professor in industrial engineering and international affairs until June 30, 1996. He will be on leave of absence with full pay and will be expected to be available as a consultant, according to a letter from Propst.

The Board of Regents wasted no time in appointing a committee to search for a new president. They selected Tech alumnus Dwight Evans to chair the search committee, and Regents Elsie Hand, Joel Cowan, Juanita Baranco, and Bill Turner will also serve with Evans. Turner is also a Tech alumnus.

Crecine was seen as a "visionary" by many when he arrived at Tech in 1986 from Carnegie Mellon, but he met resistance from faculty, staff, and students alike. Under his leadership, the College of Management was reorganized as a school under the Ivan Allen College of Management, Policy, and International Affairs. He also faced criticism from the Board of Regents about Tech's accounting procedures and came under fire for allegedly serving alcohol to swim team members at his home in 1992. Crecine had faced a $38 million lawsuit filed by four former Tech employees who alleged they were fired for whistle blowing on the consulting activities of a former Continuing Education director. The lawsuit was eventually settled for $354,000.

Crecine also was criticized for his handling of the situation with Charles Schroeder, who was hired as vice president for student services after being touted as one of the "top men in his field" but then departed Tech after four months. *The Technique* called for Crecine's resignation in the October 9, 1992 issue, citing many of the preceding problems.

by Pratt Austin–Trucks

Students particpate in the anti-Crecine rally. Students had called for Crecine's resignation. *Photo by Charles Clinton.*

President Crecine addresses important issues to fellow administrators. President Crecine resigned due to the pressure from many sources. *Photo by Charles Clinton.*

This bulldozer sits in what used to be Techwood Hall. The destruction of the dorm made way for new student apartments for the Olympics. *Photo by Allen Turner.*

Foam bricks, not real ones, are being tossed into the crowd. This was part of the publicity campaign to promote the Bricks for Books fund-raiser. *Photo by Mary McAndrew.*

Buddy Chambless and Chris Whaley exchange cash for a souvenir brick. It was through their efforts that the Bricks for Books program was started. *Photo by David Pauli.*

Gaining Public Interest

An innovative fund-raiser profits from destruction and gives new life to old bricks

After many years of service, Techwood residence hall was torn down this fall to make way for the new university apartments as part of the plans for the 1996 Olympics. When the dust settled, the refuse was collected and the bricks removed. Some of these bricks were destined not for a landfill or garbage heap, but for a fund-raising program to buy new books and journals for the Georgia Tech Library.

> *"[T]he main goal is... to provide the best quality education for the students."*
>
> *- Buddy Chambless*
> *Director of Student Advancement*

The Bricks for Books campaign began as an idea by graduate student Chris Whaley to replace funds that had been cut from the library's budget. He discussed the idea with then acting Dean of Students Roger Wehrle. Afterwards, Director of Student Advancement Buddy Chambless was brought in to handle publicity. The program officially began October 9, 1993, with a dedication ceremony at Grant Field. For a minimum donation of $50, the contributor would receive a souvenir brick with an engraved brass plate commemorating Techwood Hall.

Although Bricks for Books was the only program of its type, there were many other fund-raising projects that the Financial Development office took part in. These campaigns included sponsorship programs for the Theater of the Arts, research for the funding of new computers for Student Publications, and a joint venture with the Atlanta Ballet for support of new dance techniques. The goal of these efforts, according to Buddy Chambless, was to "look for ways to find a new angle, or a new packaging to present the programs, [so] we don't lose sight of what the main goal is, which is to provide the best quality education for the students."

Many of the ideas acted on by financial development are advanced by the students themselves, like Bricks for Books. As students learned about the office, several clubs and organizations began to work with Mr. Chambless in order to develop their own fund-raising programs.

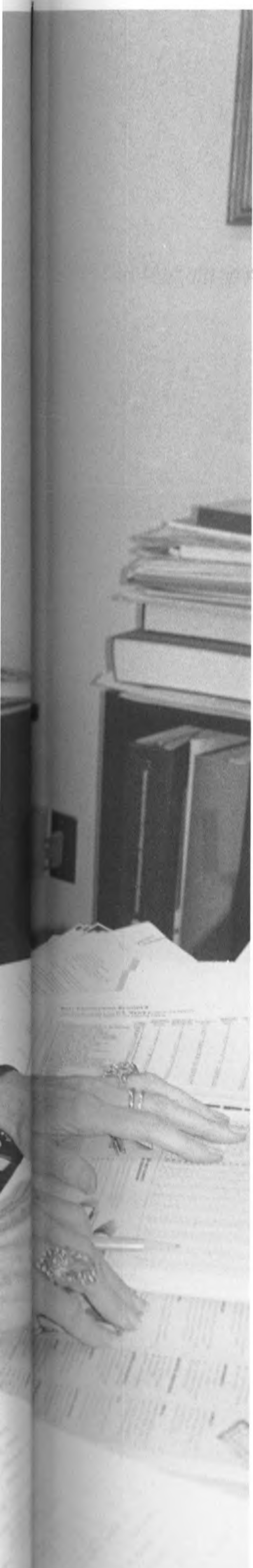
Encouraged by the overwhelming success of the Bricks for Books campaign, sights had been set on the upcoming Olympic Games as a new arena of opportunity. "There are a lot of things that we're working on...to incorporate support of projects on campus [in the Olympics.]"

by Stephen Burr

Bricks for Books officially began on October 9, 1993. Bill Knight, Ashley Gigandet, Jimmy McEver, Roger Wherle, and Chris Whaley all took part in the ceremony at Grant Field. *Photo by Mary McAndrew.*

Dr. E. Jo Baker takes time for an interview in the Student Services Atrium. Her love for her students was a major reason for her success at Georgia Tech. *Photo by Charles Clinton.*

Even at her desk, Dr. Baker always has time for a friendly chat. Her willingness to talk with students made her a favorite on campus. *Photo by David Pauli.*



Advancing Student Concerns

Dr. E. Jo Baker retires from Georgia Tech after many years of working for the student body

After fifteen years of service, Dr. E. Jo Baker retired from her position as associate vice president of academic affairs and director of the President's Scholarship program. Under her leadership, many programs were implemented aiming to increase recruitment of women and minorities. Those who have known her over the years could attest that she always cared about her students and would always give them encouragement in their interests.

> *"I wanted a student who is intelligent, but also... one who cares about what's happening in the world and takes a leadership role."*
>
> *- Dr. E. Jo Baker*

Dr. Baker's first interest was law, hoping to eventually become a judge. Her ambitions changed as a result of her experience at a juvenile court for girls. She became interested in psychology and graduated from Emory University with a doctorate in psychology in 1962. Eventually, she came to Tech as a faculty member and then a professor. The chance to teach here was the accomplishment of a long held dream. "I grew up here [in Atlanta], but I couldn't go to Tech, because they didn't allow women."

Her love for her students kept her teching at Tech for many years. "Tech students, in general, are different," she said. "They're very goal-oriented, hard working, and bright; and they are problem solvers." It was that same love that, when she was appointed to the position of associate vice president in 1978, caused her to come up with programs like FutureScape, an agendum designed to expose junior high school girls to professional women in technical or scientific careers. Many female students, after having made it through high school the same as men, still felt that they were not talented enough to pursue a high-tech carrer. "I wanted to dispel the stereotypes about women in these areas, and to let them see feminine, intelligent women."

Concerns over the ability for students to come to Tech led to the creation of the President's Scholarship program in 1980, with Dr. Baker as director. "I wanted a student who is intelligent, but also has very broad interests, one who cares about what's happening in the world and takes a leadership role." Without programs like the President's Scholarship and Futurescape, a large number of Tech students would never have attended.

Dr. Baker's perseverence has caused her to become one of the most well liked administrators at Tech. Students and faculty alike will always remember her work in improving the status of those who did not have the same resources and oppurtunities as most.

by Stephen Burr

Junior high school students perform a chemistry experiment in the Chemistry Annex. The SummerScape program, created by Dr. Baker, made it possible for young students to develop an interest in science and math studies. *Photo by Gary Meek.*

Quality of Instruction

The faculty of Georgia Tech has many distinguished and active members

Throughout the years, the Georgia Institute of Technology maintained the highest standards for the students that attended classes there. However, an exemplary student body required an equally honorable faculty. The faculty of Georgia Tech was made up of some of the most noted and honored professors and administrators in the world.

Many students, if asked, would agree that the Tech teaching staff spent all of its time trying to think of new ways to intentionally flunk hapless students. However, this was not the case. The purpose for the difficulty of the curriculum was not to inconvenience the student body, but rather to enhance the skills of those being taught, to bring them up to the highest denominator so as to continue the tradition of excellence that Georgia Tech was known for all over the globe.

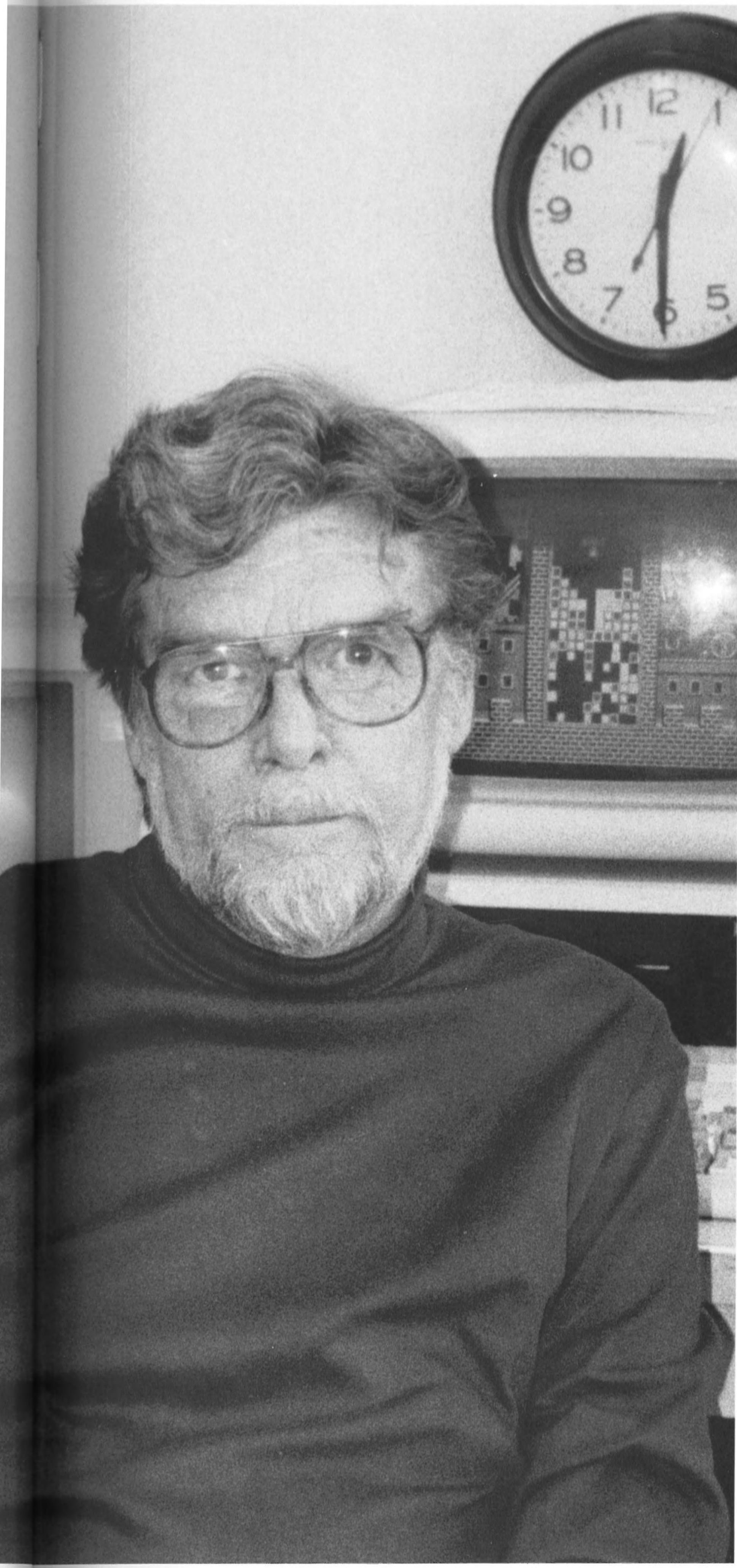
The faculty counted among its members men and women from all fields. Some received degrees from institutes and universities halfway across the world. Others graduated from Tech themselves, and returned here to instruct a new generation of students. Approximately 93 percent of the faculty held doctoral degrees.

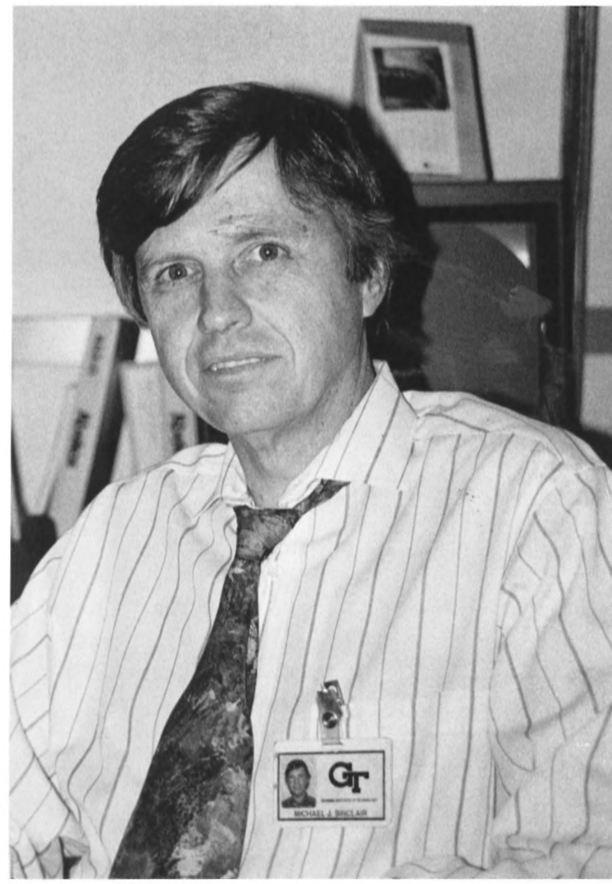
Outside of Tech, many faculty members kept up with the latest advancements. Some professors participated in lecture tours so as to let other scientists and peers know about the progress of their research and experiments. Others wrote text books to supplement or even replace their curriculum. They gave presentations and attended conventions. All this was just part of the things that the faculty members participated in so as to remain outstanding examples of the high standards that Tech maintained.

> *"Members of the Georgia Tech faculty are the major players in the students' lives. They [faculty] make the decisions that make or break the students."*
>
> *- Ron Ballard*

by Chris Foster and Alison Russell

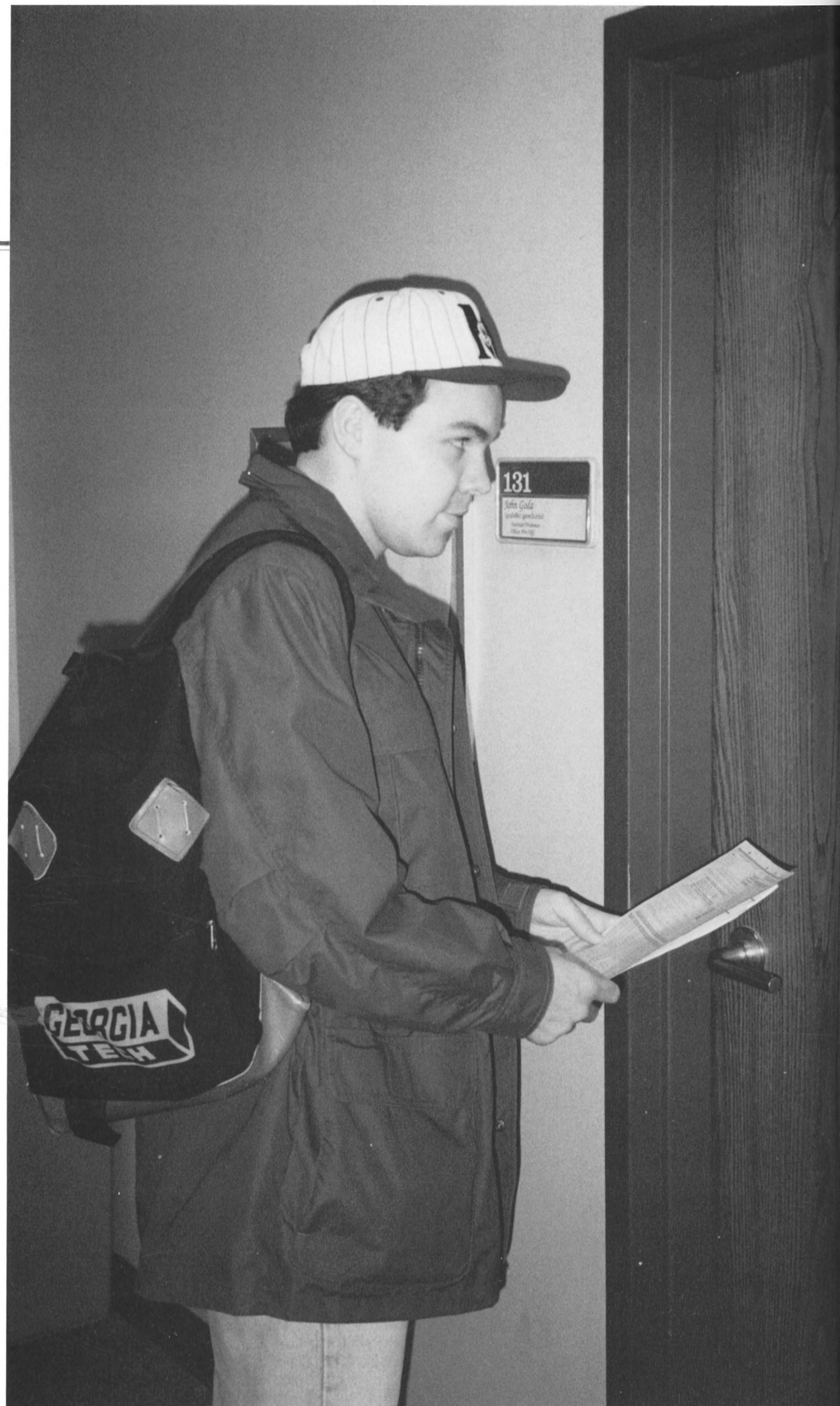
A professor lectures on a computer course in the College of Computing. There were new professors in every college, bringing new ideas to the campus. *Photo by Chris Scholtz.*





Dr. Stanford takes a break from grading papers. Dr. Stanford was one the Physics professors at Georgia Tech. *Photo by Charles Clinton.*

Dr. Michael Sinclair poses for the camera. Dr. Sinclair was the Senior Research Engineer at the Centennial Research Building. *Photo by Charles Clinton.*



Jon Edwards waits by the door of his advisor to turn in his paperwork. Academic advisement was a time for students to ask questions pertaining to their current and future course loads. *Photo by Stephen Burr.*

Directing Student Education

Advisors help point students in the right direction towards academic success

At Georgia Tech, many of the schools and colleges required their students to be academically advised at some point in their education. This was so that the faculty could remain informed about the progress of the student body. Most majors required students to be advised every quarter at least for their first year. Holds, or the inability to register for classes, were placed on a student's registration if they did not see their advisor or if a grade below a "C" was made in a required course such as calculus, English, or a course required by their particular major.

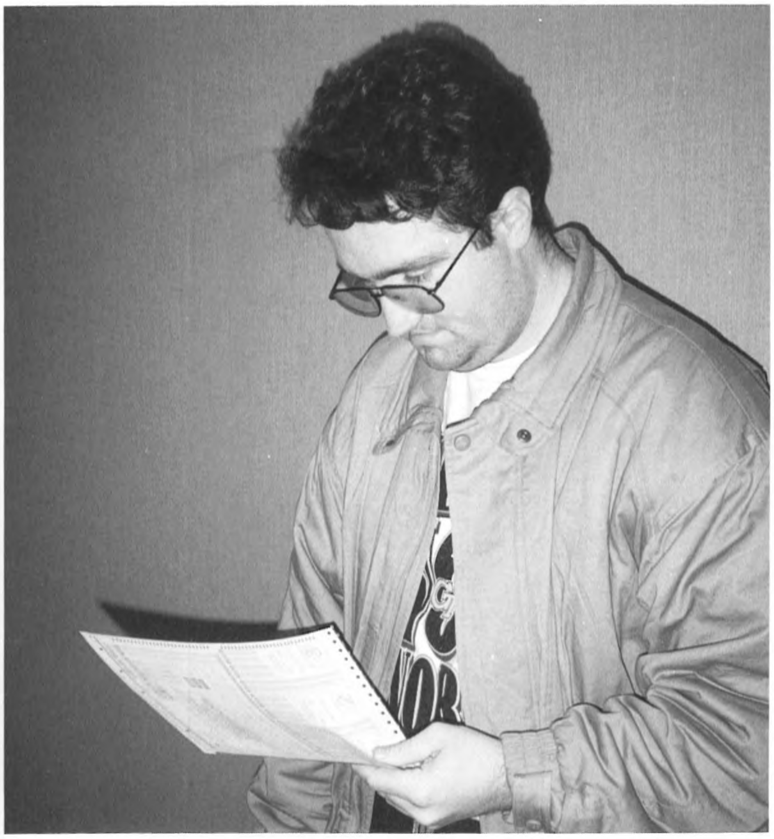
> *"Wherever I go, my advisor always keeps me from taking too many tough classes at once."*
> *- Jack Talbot*
> *Junior, CS*

Most colleges had faculty members acting as advisors, and some had special advisors that were available at any time during the quarter. For example, Electrical Engineering had all faculty acting as advisors during registration but had two advisors available at all times. In Earth and Atmospheric Sciences, there were only about 28 undergraduates, so they were able to be advised at almost any time. However, there were 72 graduate students, and most visited their assigned advisors frequently.

In Chemical Engineering, the faculty could not be as flexible because of the greater number of students in that major. Students were required to report to their advisors at an assigned time before they could register.

As a general rule, incoming freshmen were assigned academic advisors while attending FASET. In large schools like chemical engineering, students were simply placed in alphabetical order and assigned in groups to a particular advisor. Other schools could afford to allow the students to attend advisment at any time.

by Ina Heung and Derek Westfall



Preparing for his appointment with his academic advisor, Bill Standhardt takes a last minute glance at his paper work. Some students found it difficult to find time to meet with their advisor. *Photo by Stephen Burr.*

Georgia Tech students and faculty have successfully turned a former AT&T communications facility into a useful research center. The research facility was located near the beautiful city of Manchester. *Photo by Allen Turner.*

Research Into Communications

Students work at turning an obsolete facility into a new communications technology center

Students at Tech were given the opportunity to receive engineering credit while having real work experience. Through the School of Electrical Engineering, students were able to work at the Georgia Tech Woodbury Research Facility under the direction of Research Engineer, Dr. Whit Smith. The Woodbury Research Facility was located in Meriwether County, about seventy miles southeast of Atlanta. It was a former AT&T satellite uplink facility and was converted into a laboratory for radio astronomy.

> *"Working at the Woodbury Facility is a great experience. It gives me the opportunity to see how the real world works."*
>
> *- Jackie Watson*

Originally, AT&T used the Facility as one of a series of earth stations for their satellite telephone network. The site of the facility was surrounded by hills, which shielded it from the terrestrial microwave noise of Atlanta. The satellite dishes were quite large, being thirty meters in diameter. As technology improved, wideband communication became possible using dishes located around Atlanta. The site was abandoned by AT&T, and the microwave apparatus and much of the equipment necessary for dish motion was removed.

In 1993, the site was acquired by the Georgia Tech Research Corporation and converted into a radio testing and research facility. Although the completion would take longer because of students working on it, there would be substantial savings costwise and students would be involved in the beginning of an exciting project. Over the past year, the main goal was to restore azimuth and elevation motion to the satellite dishes, to develop computer software control of the dishes, and to design and optimize research facility equipment.

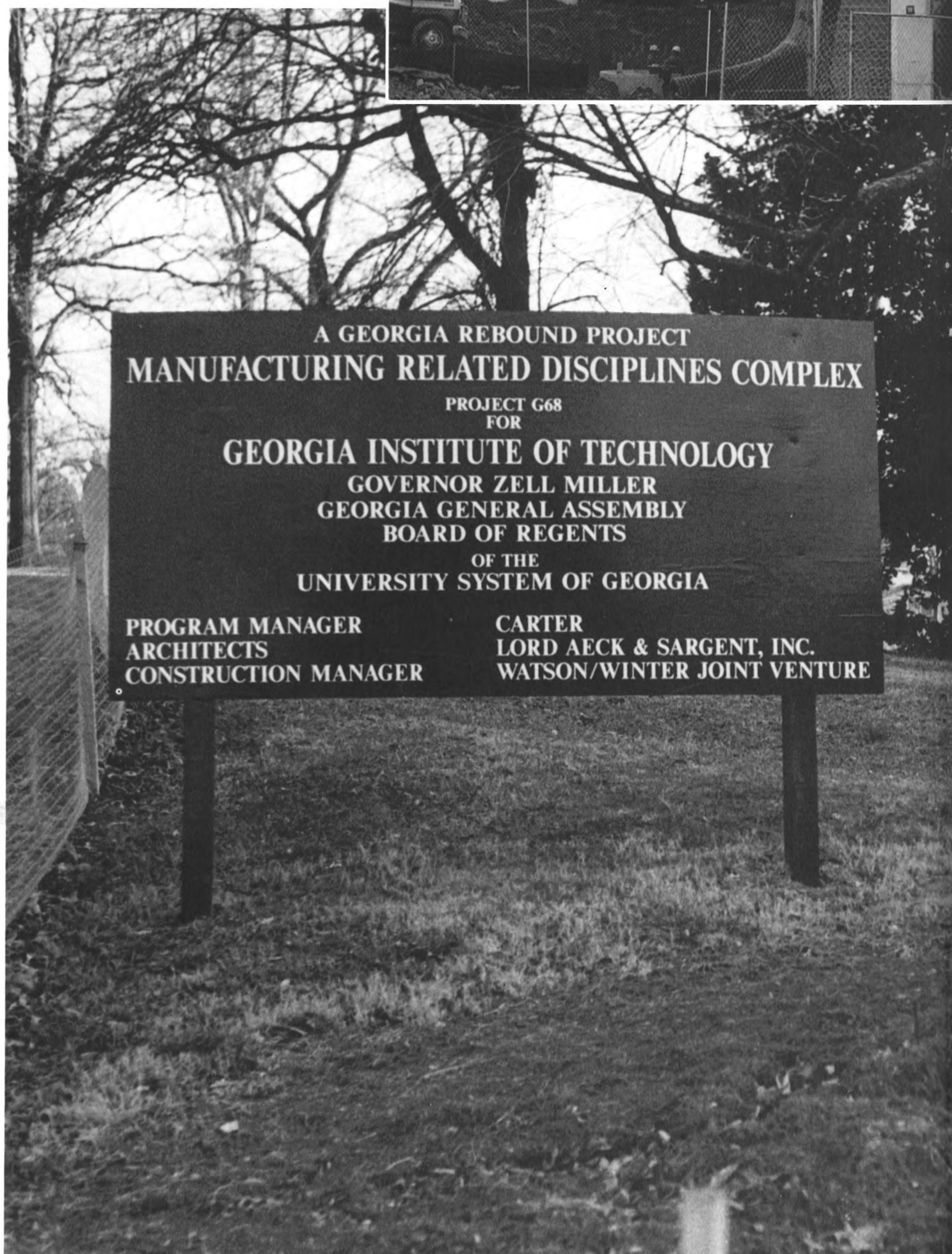
There were about thirty undergraduate and graduate students involved, with a total of about fifty students that have worked on key areas during the year. There were two ways for students to get involved with this experience. One way was to receive credit as part of a three-course series of Undergraduate Research Opportunities (UROP), and the other was as a one quarter special topics course. The project was not restricted to majors. Dr. Smith was seeking assistance from both Electrical and Mechanical Engineering students.

by Ina Heung

Two large dishes form the technical basis for communications study. The dishes are located in rural Meriwether County where microwave interference from Atlanta is not a problem. *Photo by Allen Turner.*

A sign proclaims the construction of the new MRDC building. Construction began during fall quarter of the 1993-94 school year. *Photo by Jay Allison.*

A piece of heavy machinery removes dirt from the site. It was one of the many construction vehicles to be seen at that location. *Photo by Jay Allison.*



Constructing For A New Age

A new building will greatly improve the capabilities of the Schools of Mechanical and Textile Engineering

In the future the School of Mechanical Engineering and the School of Textile Engineering will have a new building. The construction of the Manufacturing Related Disciplines Complex (MRDC) began during fall quarter of the 1993-94 school year adjacent to the Manufacturing Research Center (MARC) and the Boggs Chemistry Building. The ground breaking ceremony was conducted by Georgia Tech President Pat Crecine and featured Georgia Lieutenant Governor Pierre Howard; Dr. Ward Winer, director of the Woodruff School of Mechanical Engineering; Dr. Fred Cook, director of the A. French School of Textile Engineering, and other industry representatives. The construction was scheduled to take place in three phases. Phase I would be completed in fall of 1995, at which time most or all the classes of the Mechanical Engineering School would be moved there. Phase one would not give any additional space for the Textile Engineering School until Phase two's completion, at which time the Mechanical Engineering facilities would be expanded.

"The combination of the old and new buildings should put the Georgia Tech ME department among the nation's best."

- Bjorn Zreloff
Senior, ME

The appropriations for Phase I were $16.3 million. The cost of the new facilities was being paid for by the Georgia State Legislature. Phase II and Phase III had not been appropriated due to the fact that the Georgia State Legislature had not yet decided its fate.

Lord, Aeck, and Sargent were the architects for the adjacent MARC Building. They received the national design award for that structure and were also providing design support for the new Tech Plaza.

The building would consist of three floors with a physical plant area in the basement. The two schools each have two circular classroom/office areas which would be connected centrally by two corridors lined with additional office spaces. The interior of the MRDC would be designed and furnished in a style similar to the MARC.

The School of Mechanical Engineering has been in the John Saylor Building since 1912. The School of Textile Engineering has been in the Hightower Building since 1949. Before that time, Textile Engineering had been in the Aaron French Building since 1899. Both schools have their faculty, administration, and classrooms located in numerous buildings around campus.

Dr. Crecine seemed especially pleased with the initiation of construction on the new research and industrial complex and stated, "For the Lieutenant Governor to comprehend and appreciate the role that a research institute can play in the economic development of the state and to act on that appreciation is extraordinary."

by Gregory Tsou

The MARC is the basis for the decor and furnishings of the new MRDC building. Lord, Aeck, and Sargent were the architects that designed the two buildings. *Photo by Vincent Hill.*

Constantly Striving Forward

High marks are the norm for the rapidly growing College of Architecture

Expansion and change has been part of the College of Architecture for years. The college offered a wide array of programs including not only Architecture, but city and regional planning, industrial design, construction management, construction development, and construction science. The Department of Music and the emerging Department of Fine Arts were also included as part of the College of Architecture.

The College of Architecture started at Tech in 1908 as the Department of Architecture. It expanded since then into the School of Architecture in 1948 and the College of Architecture in 1975. Many changes have taken place since then. Dean Thomas D. Galloway entered his second year at Georgia Tech. This fall, Professor Michabandini, the previous head of the Department of Architectural and Interior Design at the University of North London, became an addition to the college.

Many changes were in store for the College of Architecture. By planning to increase staff and facilities, Dean Galloway hoped to see an improvement in the student/faculty ratio which was at 21.6/1. According to the Gorman Report, Georgia Tech was ranked an impressive eighth overall among its peer schools, but Tech ranked eleventh among these same peer schools when comparing the student/faculty ratios. There were also plans to expand the current computer labs in the College of Architecture. Computer Assisted Drafting (CAD) would be used more extensively.

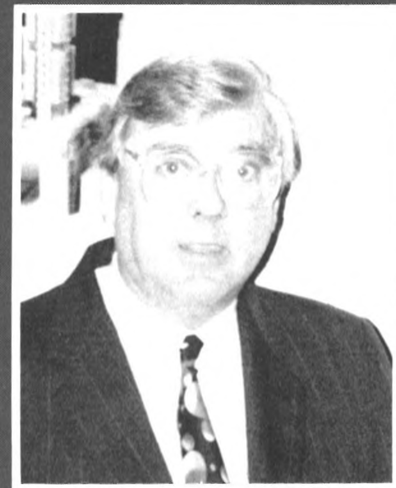
One option available to the architecture students at Tech was the opportunity to study abroad in France during their fourth year of study. Approximately forty students were involved in this program. This unique opportunity was extremely beneficial to the Architecture students not only because of the educational opportunities that the program offered, but the program helped students mature as architects.

> *"One of the things that attracted me to the School of Architecture was the ability to study the technical aspects as well as the artistic aspects of a normally liberal major."*
>
> *- Ina Heung*
> *Freshman, Architecture*

The College of Architecture provided a broad program that offered its students a different kind of education than many of the other programs at Georgia Tech. This was mainly because of its project-based style of education. The College of Architecture was probably the most liberal on campus, but students received a hands-on education which made the College of Architecture different from the rest of the programs offered at Tech.

by Ingrid Nuss

Students and faculty enjoy refreshments at an open house. Exhibitions like these gave the public examples of the work done by the college. *Photo by David Pauli.*



THOMAS GALLOWAY
Dean of College of Architecture

In October of 1992, Dean Thomas D. Galloway was appointed as the new dean of College of Architecture. Before coming to Georgia Tech, Dean Galloway held many other positions including the position of dean of the College of Design and the director of the Design Research Institute at Iowa State University from 1985 to 1992. Dean Galloway also held various positions at the University of Rhode Island, the University of Kansas, and the State University of New York. He received many honors for his achievements, including the Christian Peterson Design Award in 1992. He became involved with The Royal Society for the encouragement of Arts Manufacturers & Commerce, London, England, in June of 1992.

Dean Galloway has written several books and referred articles about city planning that have been published. He was a member of many selected national, regional, and state professional boards including the Planning Accreditation Board and Association of Collegiate Schools of Planning. He served on committees for university budget and institutional planning throughout the years.

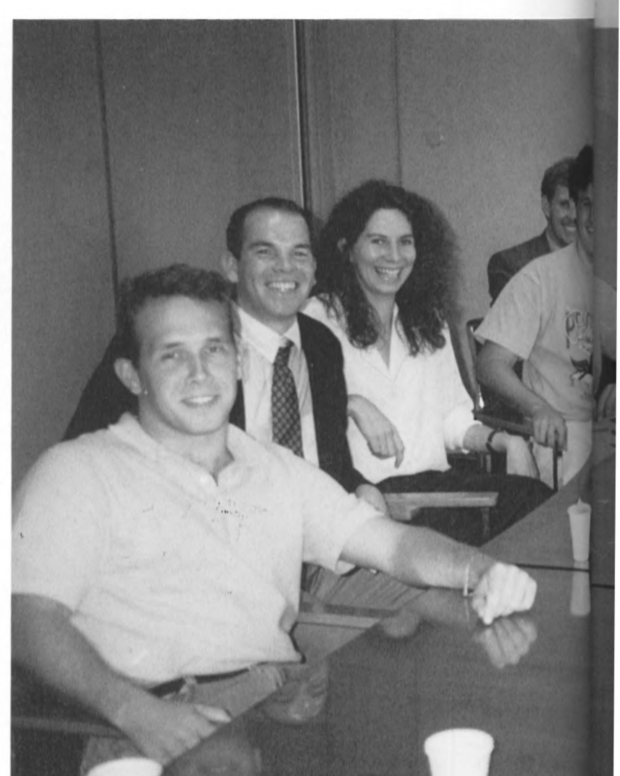
by Ingrid Nuss

Patrons of the open house gaze at the exhibition items. The College of Architecture held these exhibits to promote new techniques in design and to allow students to show off their work. *Photo by David Pauli.*

Participants in the B.C. in Britain program view the London area from the roof of the new Barclay's Bank building. The group received tours of many impressive construction sites in England and Scotland. *Photo by Building Construction Department.*

Students walk past the Parliament buildings and the famous "Big Ben." B.C. in Britain participants were allowed free time to explore London. *Photo by Building Construction Department.*

A Scottish bagpipe player entertains the crowd in the old walled city of Chester, England. Georgia Tech students learned a great deal about British culture during their five weeks in England and Scotland. *Photo by Building Construction Department.*



Construction

Here and Abroad

The Building Construction Department provides opportunities for project based learning.

Somewhere between architecture, engineering, and management, the Building Construction program trained Tech students to work in the complex, highly integrated world of construction. Building construction students enjoyed a varied curriculum, including everything from accounting to architecture history to calculus. Upon graduation, B.C. graduates were prepared to join the industry as project managers, developers, construction managers, owners' representatives or work in the research, development, or marketing of building systems and materials.

> *"Studying construction in England gave me the opportunity to understand the unique aspects of our industry in relation to those of the rest of the world."*
>
> *-Allison Adams*

Construction management, construction science, and construction development were the three areas of specialization offered within the B.C. program. Each option included a broad foundation in the fundamentals of construction technology and practice. For students in other majors, there was also a certificate program to recognize their study in building construction.

One of the innovative programs offered by the Georgia Tech Building Construction program was a summer study program in Great Britain. Students studying in the B.C. in Britain program enjoyed an intense, five week study of the differences and similarities between the U.S. construction industry and its British counterpart.

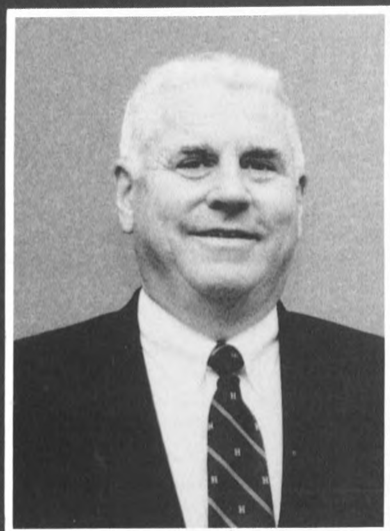
The students travelled over a great portion of England and Scotland, including cities such as London, Manchester, Nottingham, Edinburgh, and Glasgow. Hosted by several large construction companies such as Bovis International, the group received VIP tours of construction projects ranging from the restoration of the Royal Opera House to the expansion of Heathrow International Airport. Students stayed at British universities and were able to interact with faculty and students through lectures and social occasions.

The Building Construction Department was a small program where students received individual attention. This resulted in a job placement rate that was one of the highest at Tech.

by David Burt

Georgia Tech students tour a new warehouse under construction near Manchester, England. Site visites were an important part of the B.C. in Britain program. *Photo by Building Construction Department.*

Participants interact with young members of the Bovis construction team. The building construction program stresses communication skills. *Photo by Building Construction Department.*



PETER FREEMAN, PhD.
Dean of College of Computing

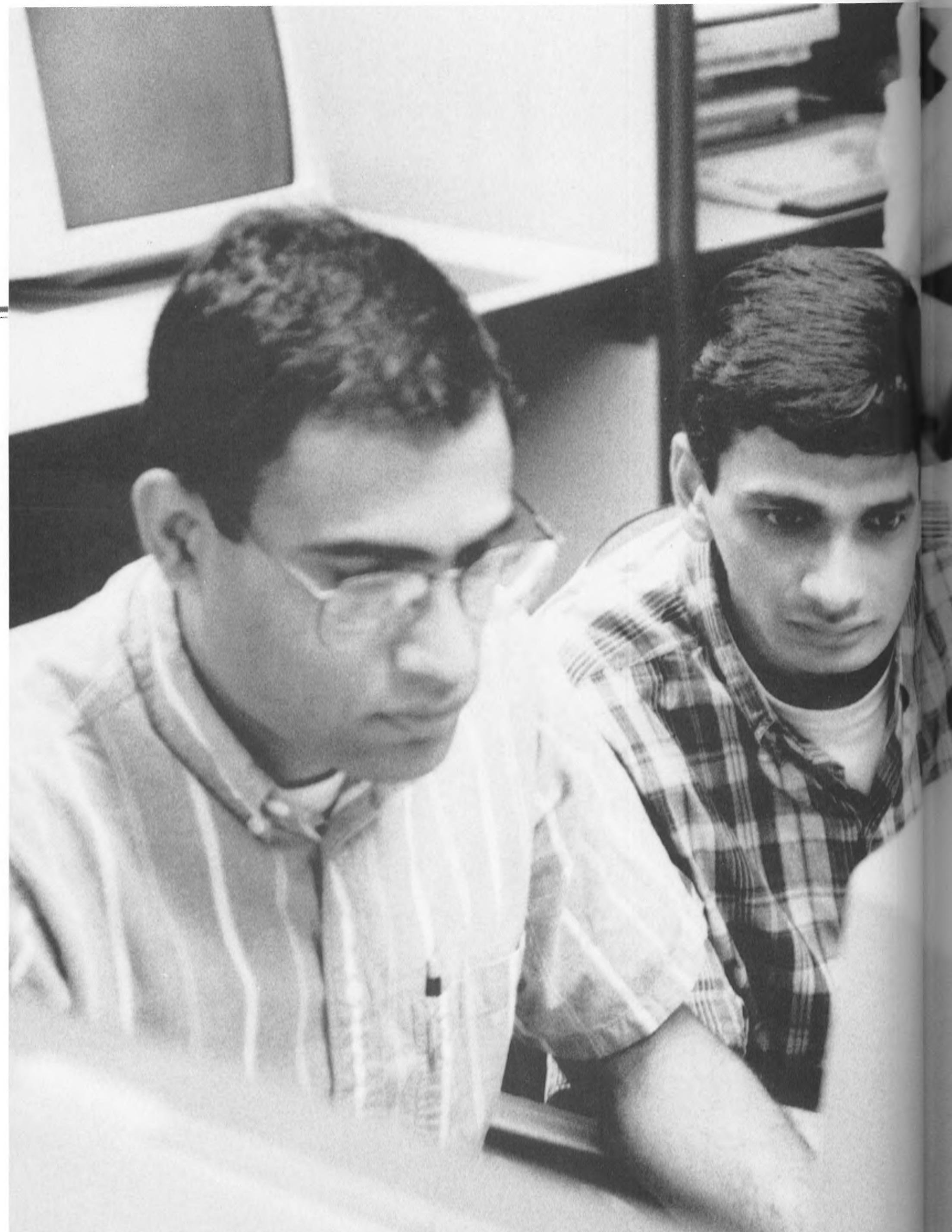
Peter A. Freeman received a Bachelors of Physics at Rice University. He received his Masters in Mathematics at the University of Texas in Austin and a Ph.D in Computer Science at Carnegie Mellon University. Dr. Freeman worked at the University of California at Irvine for twenty years. From 1987 to 1989, he served as director of Computer and Computation Research at the National Science Foundation. After the reorganization in July 1990, Dr. Freeman became the director and dean of the newly created College of Computing.

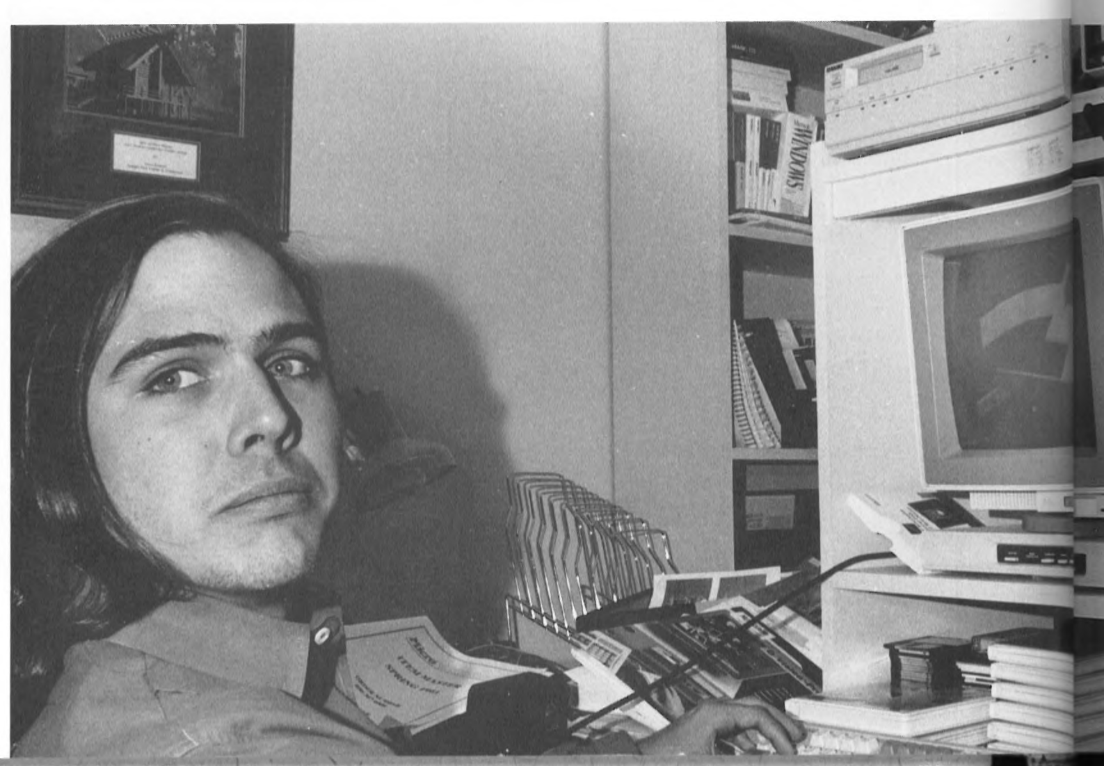
His responsibilities as dean and director were scheduling classes, assigning faculty members, and approving faculty travel. Other responsibilities not related to the College of Computing included general management of certain campus duties, budget allocations and serving as Chief Information Officer to President Crecine.

Dr. Freeman has been the author of several textbooks and numerous technical papers. He was also the founding editor of the McGraw-Hill Series of Software Engineering and Technology.

by Gregory Tsou

A three-dimensional diagram is being manipulated by this architecture student. Computers were used for modeling purposes because of the ease in which changes could be made. *Photo by Chris Scholz.*





Programming For The Future

The College of Computing supplies the demand for technically literate graduates

From research to education, from the economy to the military, advanced technology found its way into all aspects of society. Computers became a permanent fixture in the operation of the country and the College of Computing (CoC) was formed in acknowledgement of the necessity of continued development of computer technology.

Created in 1990, the College of Computing set up a curriculum to prepare students for the challenges of a technically oriented workplace. The College consisted solely of the School of Computer Science. Bachelor's and doctoral degrees were offered, as well as a certificate in Information Systems awarded jointly with the School of Management.

> "I like it [Computer Science] because computer technology is becoming a powerful force in everyday life."
>
> *- Machonne Barlow*
> *Freshman, Computer Science*

Along with the student program, the College of Computing was involved in a broad range of fields including artificial intelligence, cognitive science, computer vision, database systems, software engineering, and theoretical computer science. The college encouraged students to engage in research suited to their interests as part of the educational process. Three centers associated with the college that further focused research activities were the Software Research Center, the Center for Information and Management Research, and the Graphics, Visualization and Usability Center.

The college also maintained a large variety of computer systems in support of its educational and research activities. All these facilities were connected through local networks, which were joined to a campus-wide network, thus allowing access to the Tech community. These networking facilities gave the campus direct access to Internet which allowed communication with scientific and student communities throughout the country and the world.

With the approach of the twenty-first century, computers became more important to our society and culture. More and more people were needed who could handle themselves in a computerized environment. The high standards of the computer science program was a testament to the goal of the College of Computing to provide leadership in the creation of human resources and scientific understanding.

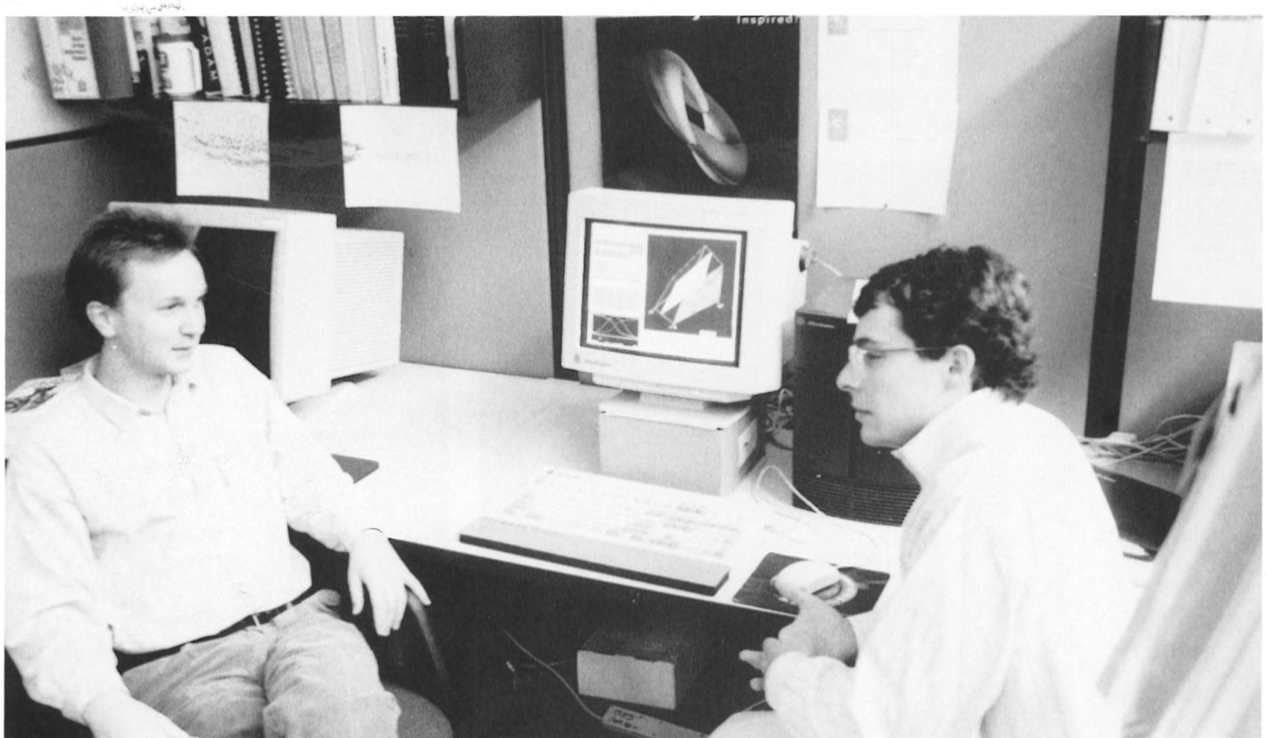
by Stephen Burr

Close examination is required so as not to miss any details from a computer simulation. Open house days at the CoC allowed students and faculty to mingle and exchange ideas. *Photo by Joel Helms.*

Refreshments are enjoyed at a reception held previous to a lecture on parallel computing. Prominent professors and scientists from across the country were guest speakers at many lectures hosted by the CoC. *Photo by Chris Scholz.*

A student is lost in another world as he tries to touch an object he "sees" in his helmet. The GVU center specialized in research into virtual reality. *Photo by Joel Helms.*

Two researchers swap ideas about programming techniques. Undergraduate participation with the Center was encouraged by the College of Computing. *Photo by Joel Helms.*



Exploring New Horizons

The GVU Center makes great strides in the areas of computer graphics and virtual reality.

Established in 1991, the Graphics, Visualization, and Usability Center or GVU center had become the pride and joy of the College of Computing. The center conducted interdisciplinary research in the areas of computers along with architecture, mathematics, engineering, medicine, and psychology. Housed in an area of over 3000 square feet, 33 faculty and nearly a hundred graduate students work in over 50 workstations in the GVU center.

> *"[Our goal] is to make computers more accessible to the public and make them as useful and easy to use as telephones."*
>
> -Joan Morton
> Administrative Coordinator

Researchers worked on an interdisciplinary project which blended psychology with virtual reality. Psychologists tried to help patients overcome acrophobia, the fear of heights, by exposing them to anxiety situations involving heights through the use of virtual reality. Examples of this included computer generated views out of windows, balconies, bridges, and elevators. The researchers hoped that when the patient encountered real life fears dealing with heights, they would be able to deal with them having already been exposed to heights through virtual reality.

Another application of the GVU center research was in the field of medicine. The research could allow physicians who were geographically located in rural areas, to diagnose their patients with the help of advanced technology in urban areas. The doctor could send images to others who would help diagnose the patient. This way, the doctor would feel like he was right next to the examination table. Another area in medicine that the research could help would be the development of systems that created more detailed images for magnetic resonance imaging or MRIs and other diagnostic images. This would allow for more efficient diagnosis of ailments.

The research conducted in the GVU center also helped education. One such project would allow engineers to test their ideas and predict the outcome of decisions by viewing them in three dimensions and actually interacting with them. Examples included testing a helicopter design or the design of a bridge or other structures.

Still in the tesing stages was a research project that used a glove that would allow the user's hand to interact in the virtual world created by the computer. Unknown to researchers was how accurate the hand's position or posture would be in virtual reality. Also, they did not know in which situations the glove would work better than other kinds of input devices.

The GVU center was also studying the creation of a virtual design used by an archiect. They could look at their actual design in three dimensions and find possible problems or places where the building should be redesigned. This technology has the potential to save large sums of money by allowing the architect to correct the mistakes before the building is actually built.

The GVU center conducted a lot of its research with the help of undergraduate students. More undergraduate involvement was encouraged by the center in conjunction with the College of Computing. The overall goal of the center, as stated by administrative coordinator Joan Morton, "is to make computers more accessible to the public and make them as useful and easy to use as telephones."

by Derek Westfall

An experiment draws attention to the screen. The GVU center held open-house gatherings in order to gain interest from students and faculty alike. *Photo by Joel Helms.*

Advancing Technical Fields

The College of Engineering plays an important role in technological advancement

The North Avenue Trade School, more commonly known as the College of Engineering, consisted of eight different schools. These schools: Aerospace Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Industrial and Systems Engineering, Materials Engineering, Mechanical Engineering, and Textile Engineering offered a variety of bachelors, masters', and doctoral degrees. The College of Engineering providedits students with some three hundred faculty and was near the top of the list in graduating the most engineers in a year's time. Even with this kind of quantity, quality was not sacrificed.

Georgia Tech's reputation was predominantly established through engineering. The need for technological advancements in engineering along with the sciences was the premise for founding the Georgia School of Technology in 1885. The overall goals of the school did not change. The purpose of the Georgia Institute of Technology was to contribute to the fulfillment of the scientific and technical needs of the state of Georgia through education, research, and service.

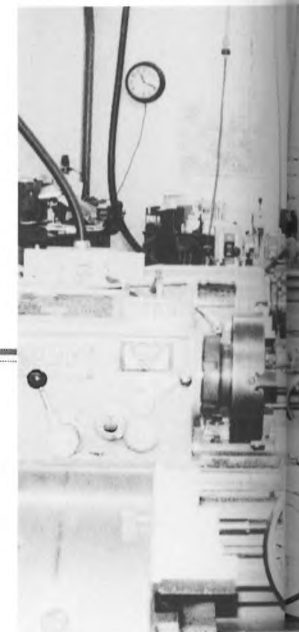
Most of the degree offerings within the school required the same course curriculum for the first year and a half of undergraduate study. Through multi-disciplinary study, students earned certificates in other programs of study.

The future ambitions of the College of Engineering included the desire to implement more crossdisciplinary projects. These goals ideally would have brought together the specialized skills of certain individuals from different majors to collaborate as a group on a given project. An example would be the exhaustive design of a building which could include most of the college's engineering fields and could cross over into the College of Architecture.

> *"To be successful at Tech's engineering program takes time - lots of time."*
>
> *- Darren Strader*
> *Senior, Electrical Engineering*

The College of Engineering played an important role in Gerogia Tech's reputation, prestige and in technological achievement. Without the College of Engineering, there would not have been the need to call the Georgia Institute of Technology, Georgia Tech.

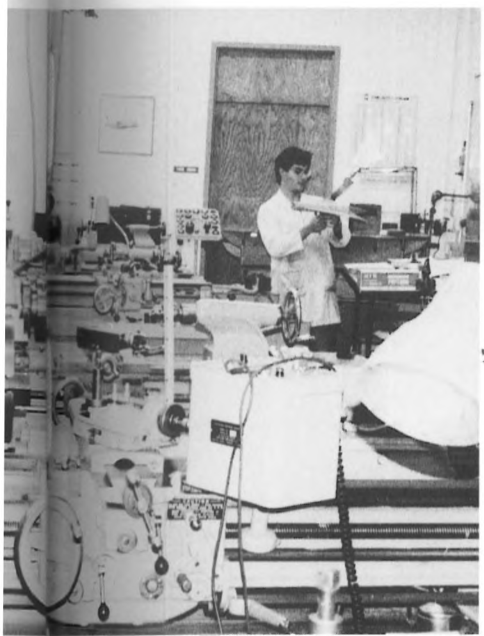
by Gregory Tsou

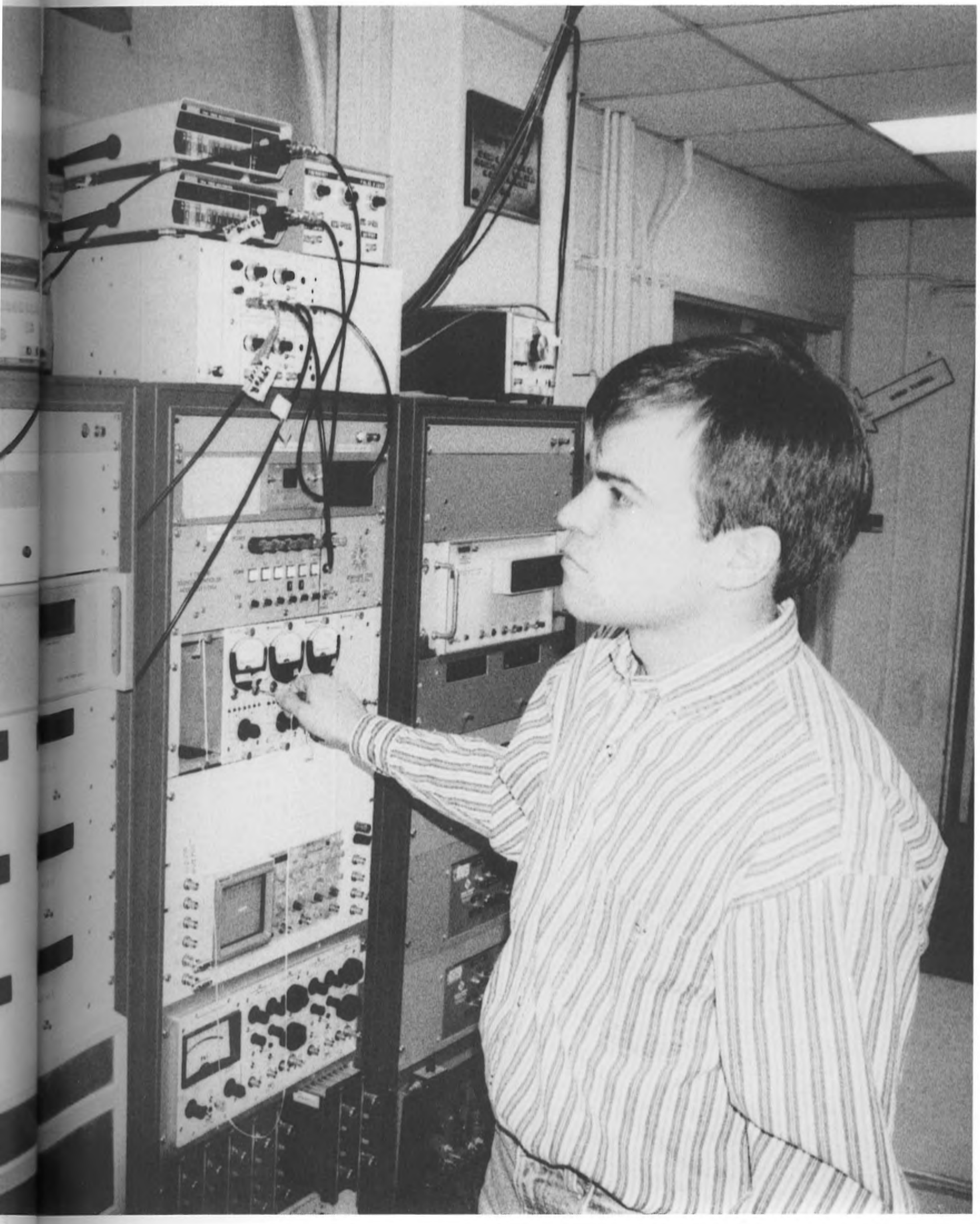


Banks of equipment are being readied for the next project at the wind tunnel lab. Researchers tested their models here to see where there would be improvements. *Photo by Joel Helms.*

J.D. Huggins, David Magee, and Claus Oberfell show off RALF, an experimental robotic arm. The Department of Energy sponsored research into using robots for nuclear waste cleanup sites. *Photo by Todd Sleeman.*

Testing aeronautical designs requires much advanced equipment. The School of Aerospace Engineering maintained a wind tunnel laboratory for experiments in structural analysis, air flow dynamics, and design stability. *Photo by Joel Helms.*





JOHN WHITE, PhD.
Dean of College of Engineering

Dr. John White began his studies in engineering as part of his undergraduate work in his home state of Arkansas. He worked at Kodak as an engineer while studying part time for his master's degree at the University of Virginia. He worked towards a doctoral degree at Ohio State University while beginning a teaching career. Before assuming the office of dean of the college, he spent his years as an ISyE professor, and for a time served as assistant director of the National Science Foundation in Washington, D.C.

Dean White was optimistic for the future of Georgia Tech. He would like to see more focus on the undergraduate programs in the next few years. Emphasis must be placed on students entering interdisciplinary activities because a diverse learning background would be ever more necessary in a more integrated world. "We compartmentalize things far too much." Extracurricular activities should be encouraged for the experience and learning that goes with them. All and all, Dr. White hoped to see the students of Georgia Tech continue to place top honors.

by Stephen Burr

Special attention is given to the base of this robot. New manufacturing techniques, researched by the School of Mechanical Engineering, created stronger, more flexible designs that would be used in a wide range of fields. *Photo by Todd Sleeman.*

Promoting World Cooperation

As Tech's only overseas campus, Georgia Tech Lorraine is in a class by itself

If a student was to take a stroll outside one particular remotely-located facility administered by Georgia Tech, he had better have a French-English dictionary close at hand, because the facility resides in France, more accurately, in Lorraine, an area in the northeastern part of France.

Located in Metz, Georgia Tech Lorraine may have been the only U.S. university in Europe offering an American master's degree during 1993-1994. It offered fully accredited graduate degree programs in electrical engineering with emphasis on signal processing, communications, and systems and controls. GT Lorraine also offered a dual degree program with the Ecole Superieure d'Electricite, Supelec, in the form of the "MSEE - Diplome de Specialisation." Many who attended this program were rated at the top in their respective countries.

GT Lorraine was the result of a partnership between the state of Georgia and the Lorraine region. Lorraine officials first visited the U.S. 15 years ago to recruit high-technology companies to set up locations in Metz. Over the years, several American companies have placed facilities in Metz. In 1988, Tech was asked if it wanted to establish a presence in the area, and two years later, GT Lorraine officially opened its doors.

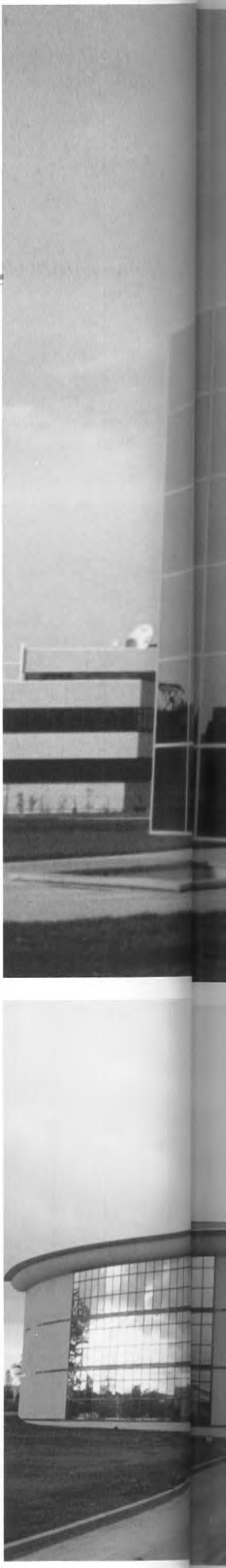
The 50,000 square foot facility was located in an industrial/research park called Technopole Metz 2000. Due to its close proximity to Supelec, students from both schools share resources and cross register for classes. Those American students who wished to enroll for the dual degree program could take an intense 10-week French course at the University of Metz. The enrollment at the GT Lorraine campus was relatively small with housing existed for only 45 students. Students from America were outnumbered by two-to-one.

> *"GT Lorraine is the European extension for Georgia Tech into the scientific, technological, and economic community emerging in Europe."*
> *- Dr. Hans Puttgen*
> *Director, Georgia Tech Lorraine*

GT Lorraine was a French, non-profit organization. It operated under French law, and all its board members and its president were French. However, all academic and research endeavors were the responsibility of Georgia Tech. The director and chairman of the Coun-cil was Dr. Hans Putt-gen, a Georgia Tech professor of electrical engineering.

by Stephen Burr

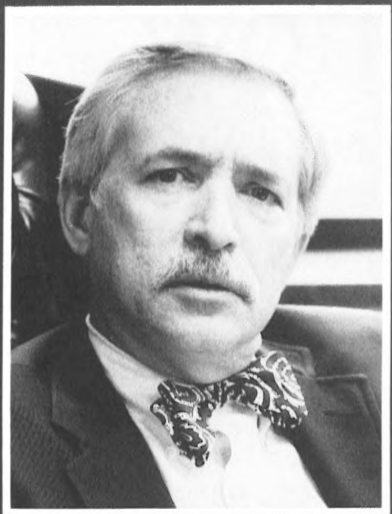
Dr. Hans Puttgen stands before a map of the Technopole Metz 2000. The campus was located there along with several other European universities. *Photo by David Pauli.*



The Georgia Tech Lorraine campus consists of a single building. Classes were close-knit because of the size of enrollment. *Photo by Hans Puttgen.*

Students and their families stand outside the entrance to Georgia Tech Lorraine. The campus was home to 45 graduate students from all over the world. *Photo by Hans Puttgen.*

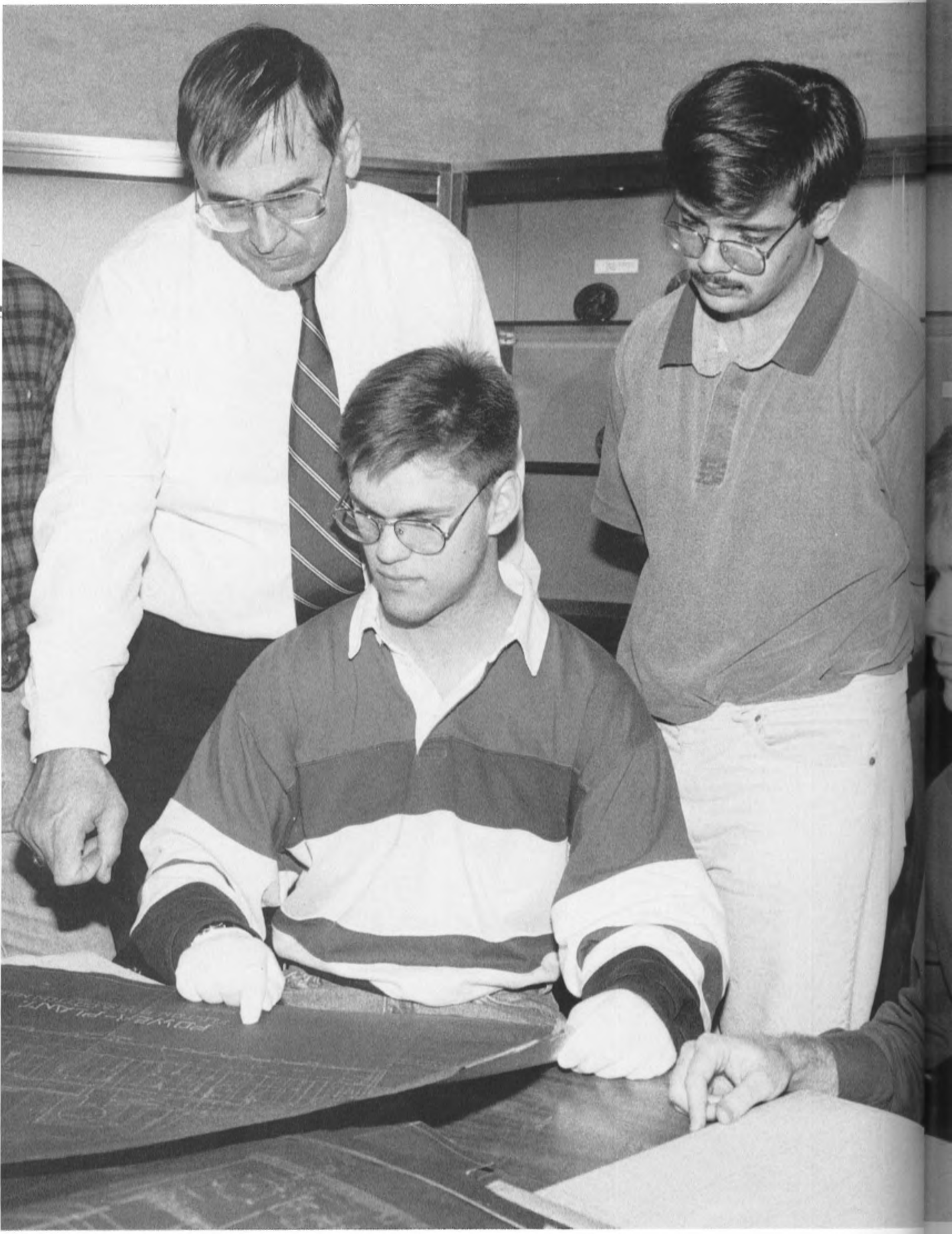
These graduate students work hard on their studies. Competition was fierce at Georgia Tech Lorraine. *Photo by Hans Puttgen.*

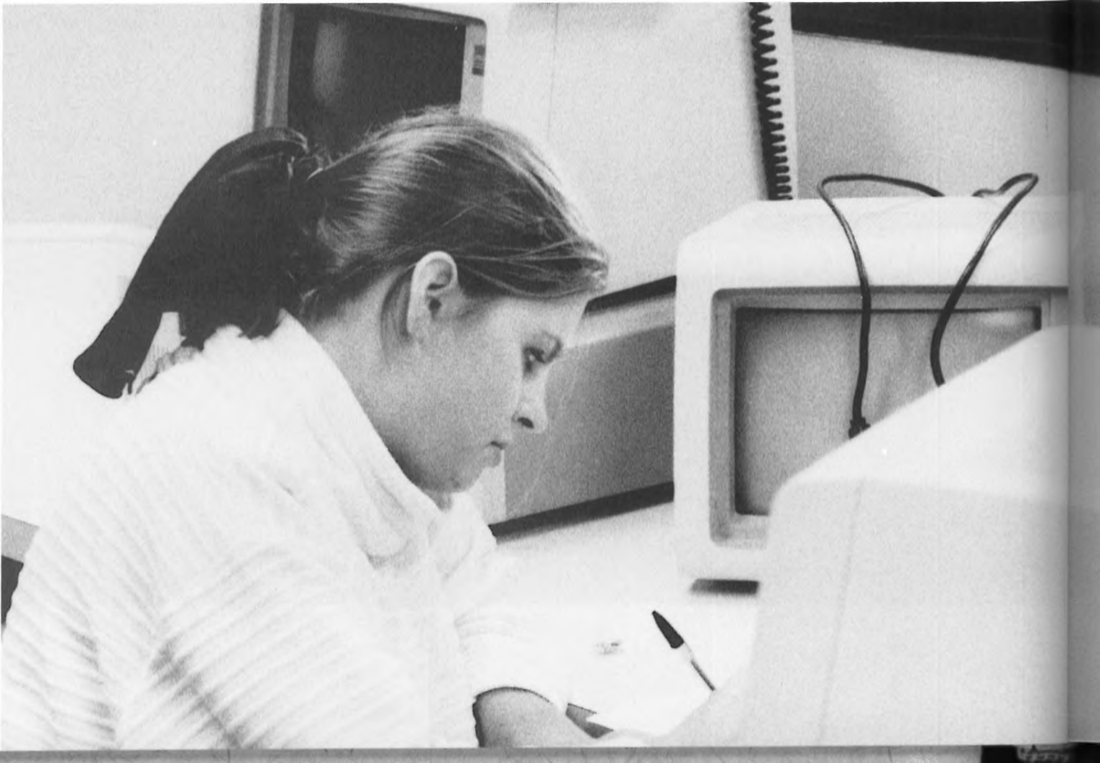


ROBERT HAWKINS, Ph.D
Dean of Ivan Allen College

Robert G. Hawkins has served as Dean of the Ivan Allen College of Management, Policy and International Affairs, the third largest school at Georgia Tech, since January 1993. Before accepting this job he was the Dean of the School of Management at Rensseler Polytechnic Institute, since 1984. Dr. Hawkins graduated in 1958 from William Jewell College in Liberty, Missouri with a BA Degree and received a Ph.D in Economics from New York University in 1966. He spent a great deal of time at NYU, where he taught as a professor of Economics and International Business. He then held the positions of Chairman of Finance Department, Chairman of International Business, and Vice Dean of Business Administration. He served as president of the Academy of International Business, executive secretary treasurer of the American Finance Association, chairman of the International Affairs Committee of the American Assembly of Collegiate Schools of Business, and member of Beta Gamma Sigma (business administration and economics honor society.)

by Samiha Bhatti





This student is working on her homework in the McGraw-Hill Building. Most students at the Ivan Allen College preferred studying at this building. *Photo by Vincent Hill.*

Understanding Global Politics

Ivan Allen College broadens students' horizons in areas outside of engineering

Six schools composed the Ivan Allen College of Management, Policy, and International Affairs. The oldest one, the School of Management, was originally founded in 1913 as the School of Commerce. Later, the Ivan Allen College added schools in the areas of Economics; History, Technology and Society; International Affairs; Literature, Communication and Culture; Public Policy; the department of Modern Languages; and Georgia Tech's three ROTC departments.

> *"Everyone is still really enthusiastic and willing to help since this branch is still new."*
> -Laura Richardson
> Freshman, INTA

The School of Economics offered both a Bachelor's degree and a certificate in economics. These provided a good undergraduate study for students intending to pursue advanced degrees in management, law, and public administration. The School of Economics provided a broad background that extended to mathematics and statistics but also dealt with humanities and the social sciences.

The School of History, Technology, and Society provided a Bachelor of Science in History, Technology, and Society through programs established to provide a better understanding of social issues related to the development of the modern world. The students were required to complete course work in mathematics and engineering.

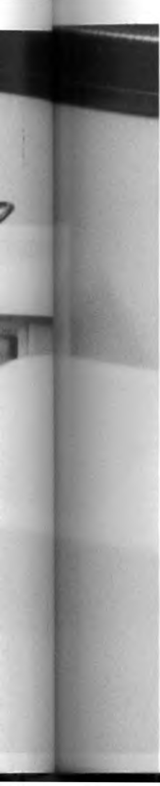
The School of International Affairs offered a Bachelor of Science in International Affairs. The curriculum included studies in international affairs, modern languages, history, economics, and sociology.

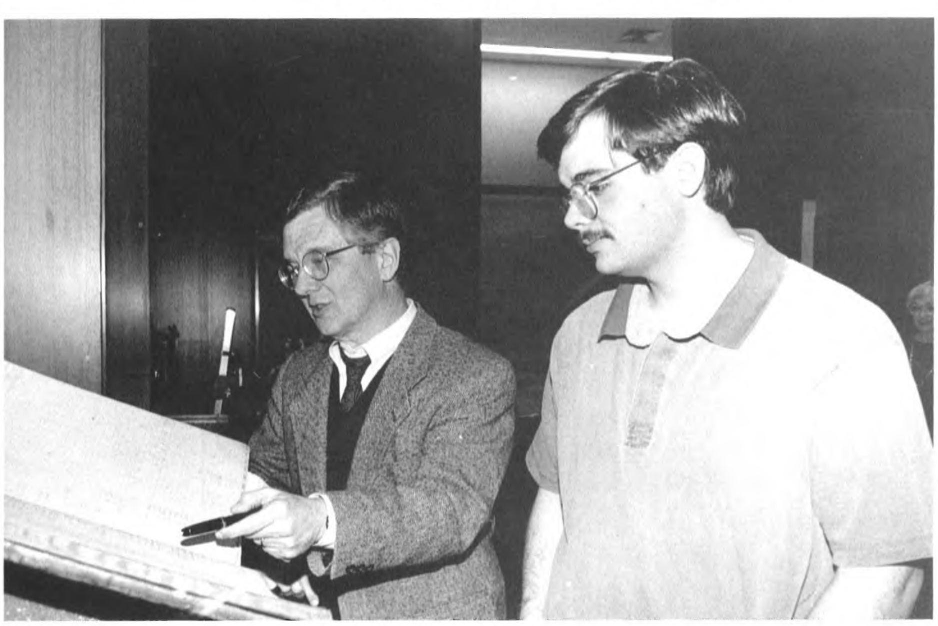
The School of Management offered a bachelor's, master's, and doctoratal degree in either management or management science. Students of this school received a high quality education which prepared them for the complexity of the industrial and governmental world.

Ivan Allen's School of Literature, Communication, and Culture offered not only an undergraduate degree but also five certificate programs. The school enabled students to study and practice writing in a wide range of technological, cultural, and scientific environments.

The School of Public Policy offered undergraduate courses in political science, philosophy, and other social sciences. Bachelor's and doctoral degrees in Public Policy were planned.

by Lauren Arnett and Nicole Andrews





These students with professor Gus Giebelhaus are looking through old blueprints. The School of History, Technology, and Society maintained a rare book room at the Hightower Library. *Photo by David Pauli.*

Professor Robert McMath and Danny Sparks examine some old accounting ledgers. Research of historical texts and documents gave a clearer view of what the country was like decades ago. *Photo by David Pauli.*

Technology Aiding Society

The ITSP Center teaches the importance of technology in today's society

With the approach of the 21st century, the Center for International Strategy, Technology, and Policy (ISTP) was there to demonstrate Tech's continuing commitment to the ever changing relationship of technology to society. It formed dynamic unions between business, government, and the world community.

Created in 1990, the center was devoted to the concept that technology served society as part of well-conceived policies. Their main objectives were to foster interdicplinary examination of international issues, create programs to enhance the competitiveness of American industry, and to assist the Southeast in its goal to become an international commercial force.

One major international worry this year was that North Korea, spurred by the fall of communism and its own isolationism, would ignore the U.N. Nuclear Nonproliferation Treaty and begin building nuclear weapons. The Center proposed the creation of a limited non-nuclear free zone and of a Northeast Asian security community as a method to address this problem. John Endicott, a professor from the School of International Affairs, and head of the center, believed that the proposal would be widely supported. He argued that a limited non-nuclear zone would give the different states of Northeast Asia the assurance they needed that the nuclear "genie" would be under control.

As part of a special topics class, Prof. Endicott took about fifty Tech students and twenty high school students who were in advanced classes and made them examine the Northeast Asian Nuclear-Free Zone concept. Everyone studied a particular country to become knowledgable in that country's policy. They then spent the day arguing the policy, after a introductory speech by Ioung-min Kwon, the Consul General of South Korea to Atlanta. The purpose of the session was to determine the best location for the permanent headquarters of the Nuclear Free Zone organization. The country selected was Mongolia; Endicott felt the session was very beneficial.

> *"This effort could be the beginning of a new framework for peace in [Northeast Asia.]"*
> - *Dr. John Endicott*
> *Director, Center for International Strategy, Technology, and Policy*

As the world rapidly grew and changed, it was realized that all the nations of the globe would eventually grow to be closely related neighbors. The Center for International Strategy, Technology, and Policy continued to promote the advancement and use of technology, and also address the strategic, long term questions of the future.

by Stephen Burr

Participants in the Nuclear-Free Zone conference take a break. Students from both Tech and local high schools were honored to be part of the debate. *Photo by Dr. John Endicott.*

Ioungmin Kwon delivers the speech on the Northeast Asian Nuclear-Free Zone concept. Mr. Kwon was the Consul General of South Korea to Atlanta and worked very closely with Dr. Endicott. *Photo by Dr. John Endicott.*

The Center for ITSP was located in the Habersham building. Promotion of technology was the main thrust of the center's efforts. *Photo by Matt Damrau.*

Dr. John Endicott chats with a vistor. He was the director of the Center for ITSP, and supported the idea of a treaty zone in Northeast Asia. *Photo by Stephen Burr.*

Educating Scientific Scholars

The College of Sciences mixes elements to create a new, broader curriculum

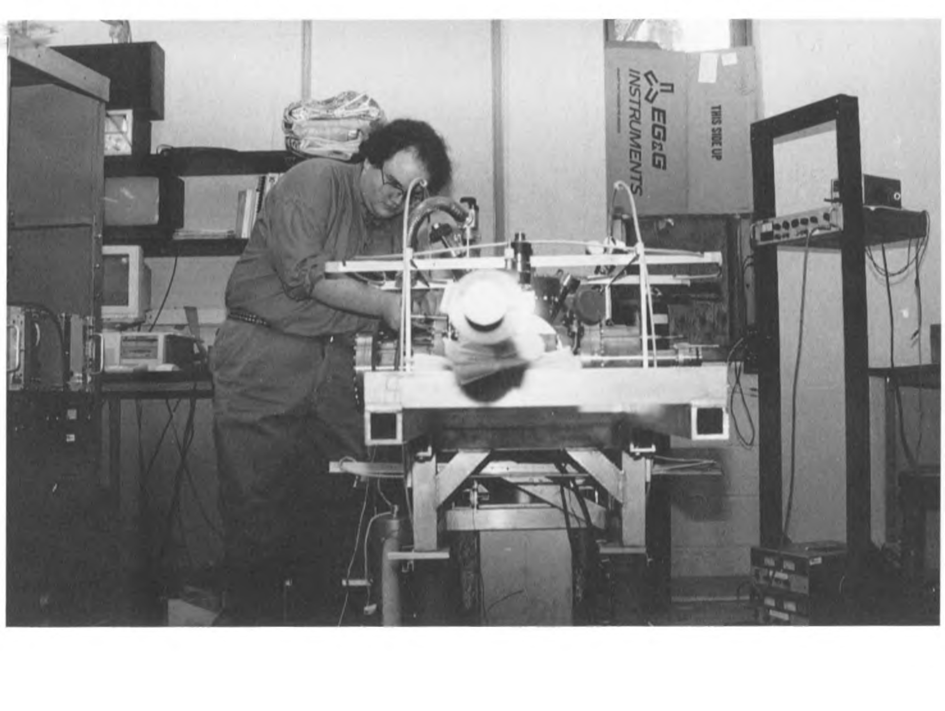
Before the Year 1990, the College of Sciences was known as the College of Sciences and Liberal Studies. This year, the College of Sciences contained six schools and one department. These were the Schools of Biology, Chemistry and Biochemistry, Mathematics, Earth and Atmospheric Sciences, Physics, Psychology and one nondegree-granting department, the Department of Health and Performance Sciences.

Over the past few years the facilities of the schools were greatly improved. The course offerings were reorganized, physical space renovated, young faculty hired, and the student population grew. In addition, more degrees were offered in the College of Sciences. For example, a new degree was offered in Earth and Atmospheric Sciences, a masters program in Health and Performance Sciences was discussed, and a Ph.D in Biochemistry was offered. Most of the changes that took place involved the Center for Education and Science, Mathematics, and Computing (CEISMC). Some of the projects they worked on included sponsoring pre-college activities like summer camps to enhance science and mathematics courses in various high schools and middle schools. CEISMC also allowed undergraduate students to receive their Bachelor's degrees in their chosen fields and teacher certifications which enabled them to teach as soon as they graduated. Since 1992, the introductory science, math, and computing courses were also improved. A case in point, in math the average class size dropped from one hundred and seventy-five to forty-five students, and tutorials and recitations were used to help the students in science courses. Overall, the College of Sciences made these improvements to better serve students.

> *"I was surprised to discover how close knit students and faculty are in the College of Sciences."*
>
> *- Joye Percer*
> *Sophomore, Biology*

In addition to improvements for the students, the College of Sciences offered students various degree programs in mathematics and natural sciences. Certificates and high level teaching certificates were also available. The College of Sciences provided more opportunities for advancement at the graduate level and opportunities to broaden a student's education beyond the degree requirements.

by Gregory Tsou



Calibration of laser equipment is a tricky business. Cutting edge technology and instrumentation made for more accurate experiments. *Photo by Brandon Yee.*

ROBERT PIEROTTI, PhD.
Dean of College of Sciences

Dr. R. A. Pierotti worked at Georgia Tech longer than most alumni, and he has loved every minute of the previous thirty years he has lived in Atlanta. He received his Bachelor's degree from Pomona College in southern California and later completed his education at the University of Washington where he received his doctor's degree in Chemistry. He is married and has a daughter who received her Master's degree from Georgia Tech and a son who studied in aviation school.

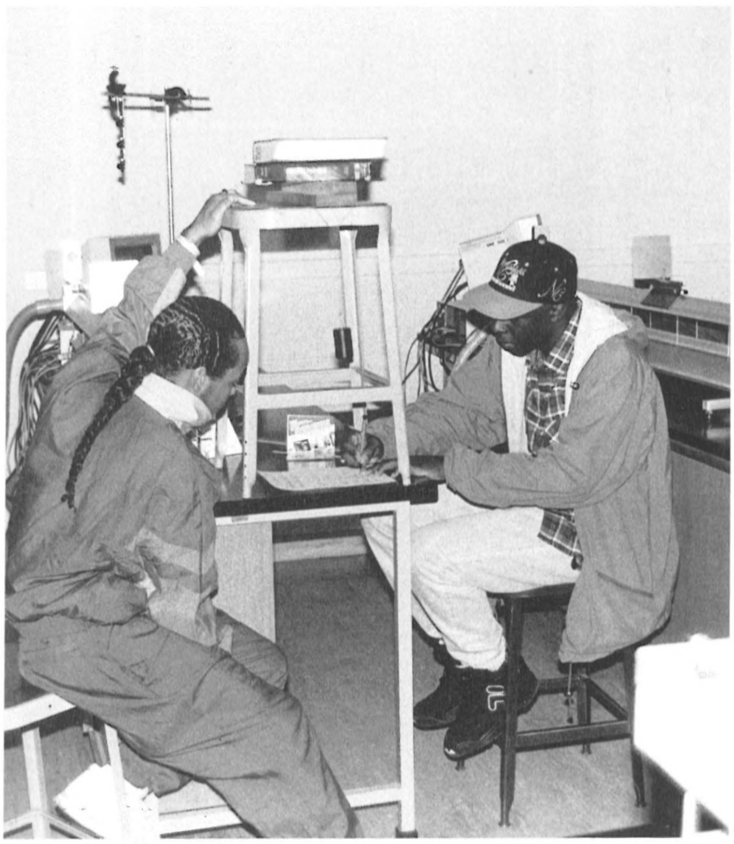
Dr. Pierotti taught at the University of Nevada. In 1982, he became the dean of the School of Chemistry at Georgia Tech. Then in 1989, he became the dean of the College of Sciences and Liberal Studies.

As dean of the College of Sciences, Dr. Pierotti's responsibilities included handling the administration, budgets, hiring faculty and working with the various schools to help them achieve their goals.

Dr. Pierotti believed that Georgia Tech was a first rate institution with first rate students. His advice to entering students was to plan how they wanted to succeed and to pay attention to the details of attending the university.

by Samiha Bhatti

Experiment results are being displayed on this computer in one of the Physics labs. Many of the labs on campus had computers aiding in procedures that would be too difficult to accomplish in a less advanced setting. *Photo by Brandon Yee.*



Program participants experiment with a swinging pendulum. CEISMC supported such programs for high school students. *Photo by Matt Damrau.*

High school students are testing a weight operated car for the Science Olympiad. The Science Olympiad was sponsored by CEISMC. *Photo by Charles Clinton.*

Assisting Future Students

High school students encouraged by CEISMC to work towards a future in science and math

Georgia Tech's Center for Education Integrating Science, Mathematics, and Computing or CEISMC, helped teachers, precollege level students, underrepresented students, policy makers, and the community at large become aware of and support computers, mathematics, and science through the various programs it sponsored.

One of the programs was KIDS Club, which was held several times a year. This program involved children in grades four through six. It used creative workshops to involve young children in learning about science. It was an interactive way of making science fun for younger children.

> *"CEISMC give students a chance to participate in Science."*
>
> *-Lloyd Smith*

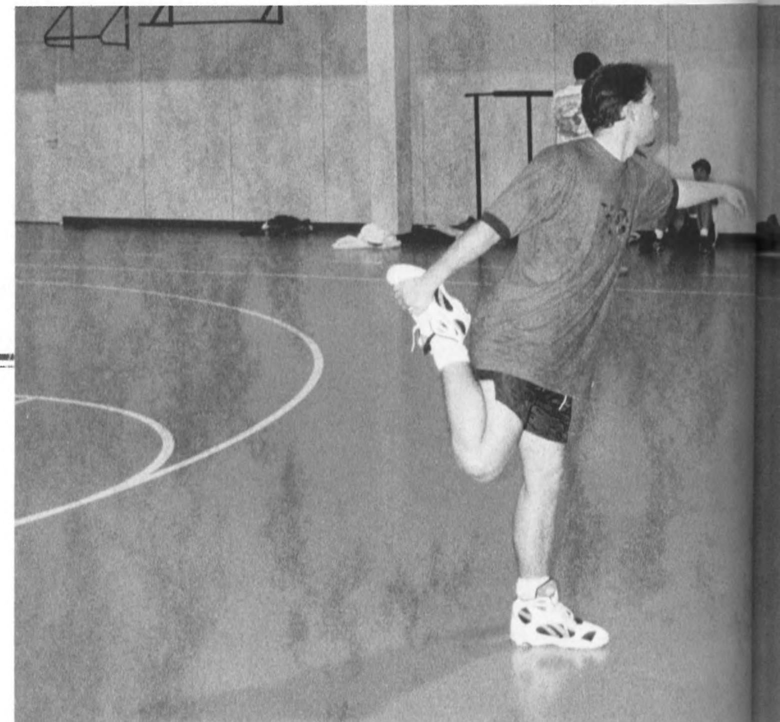
Georgia Tech planned to host tournaments of the Georgia Science Olympiad, another program sponsored by CEISMC. This program involved students in grades six through twelve. The Science Olympiad was a competition that challenged the students to think and apply their knowledge in a creative fashion.

One of the programs CEISMC sponsored for teachers was GIFT, which stood for the Georgia Industrial Fellowship for Teachers. GIFT was an eight week program that placed around 60 middle school and high school teachers into schools, universities, or corporations to acquire hands on experience in a science or mathematics based field. This was a paid fellowship which helped expose teachers to the applications of a particular field of study. The teachers, in turn, brought this information back to their students through examples of practical applications of study.

CEISMC also targeted minority groups such as women and other underrepresented groups through programs like the Southeastern Consortium for Minorities in Engineering (SECME) and Women In Science and Engineering (WISE). SECME sponsored and developed programs to increase the interest of minority students in science and engineering. This program was begun in 1975 and involved 29 universities, 65 cooperations, and 69 school systems. The WISE mentorship program grouped a middle school teacher with a woman involved in a technical field to develop in-class activities to help introduce girls to opportunities in math and science. The goal of the WISE program was to make girls more aware of careers in sciences and in other technical fields.

by Alison Russell

These students tabulate their results immediately after their completion of the lab. One of the goals of SEICMC was to have everybody work together as a team. *Photo by Charles Clinton.*

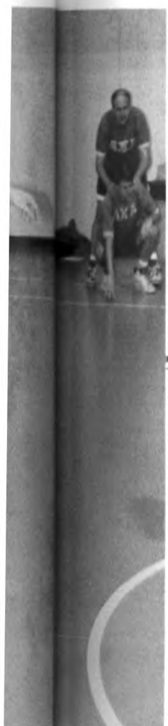


Students of Geogia Tech take full advantage of the SAC swimming pools. SAC has both indoor and outdoor swimming facilities. *Photo by Allen Turner.*

This student stretches out before he jogs around the basketball court. SAC has both indoor and outdoor running tracks for student use. *Photo by Matt Damrau.*

Exercising Your Options

SAC provides Tech students with many opportunities for self-improvement



Life at Georgia Tech took many forms this year. From attending athletic events to participating in clubs, students took time off from their rigorous academic schedules to take part in many campus activities.

The Department of Health and Performance Sciences offered a wide range of courses including the required HPS 1040 or 1061 class, aerobics, swimming, tennis, golf, volleyball, racquetball, bowling, basketball, soccer, lifeguard training, CPR and standard first aid, weight control through diet and exercise, and physical conditioning. The department sought to offer a curriculum that contributed to the total education and peak functioning of the individual based on the belief that sound health practices, physical fitness, and adequate neuromuscular skills were important.

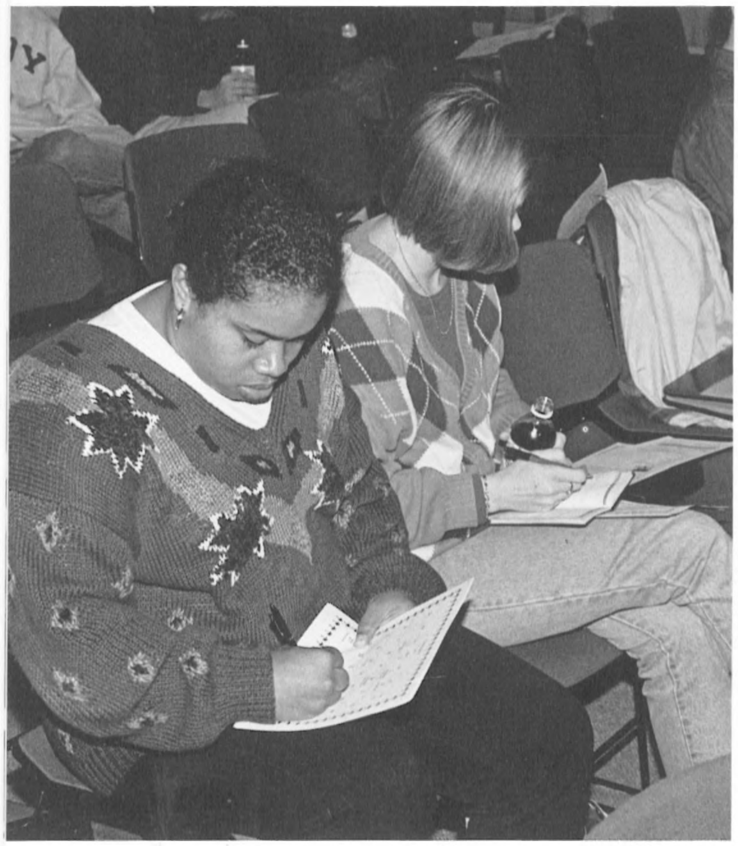
> *"SAC relieves stress from school work."*
>
> *- Chris Yueh*
> *Freshman, ChemE*

Another activity that was available to students was the non-credit extra-curricular classes. These classes ranged from classes at the Student Athletic Complex (SAC) to the Student Center. With the incorporation of SAC classes and the Student Center Options Committee, students were given a wide variety of classes to choose from. This merging allowed students to enroll at both the Student Center and SAC for classes offered at both locations. Along with classes at SAC and the Student Center, Options offered classes sponsored by many other organizations on campus. These organizations included the Counseling Center, Career Planning Services, and the Wesley Foundation.

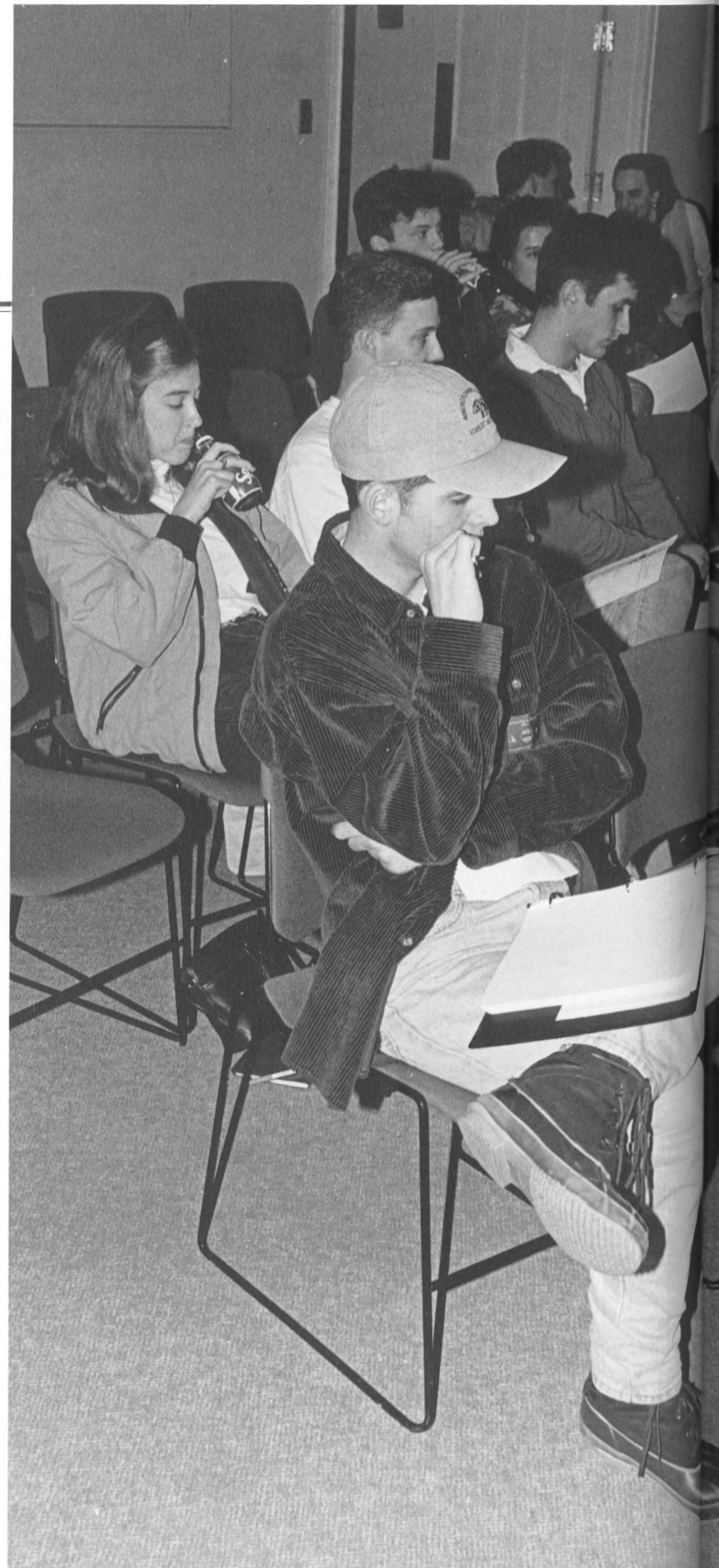
Options classes included martial arts, aerobics, scuba, yoga, horseback riding, ballroom dancing, religion, music, craft, pottery, and counseling classes. This diversity allowed students to enjoy activities that they normally would not have had the opportunity to participate in, thus helping students become more well-rounded. Students in these classes found their life at Georgia Tech to be more bearable. Through Options, students took classes that held their interests and took their minds off their studies.

by Danny Lin

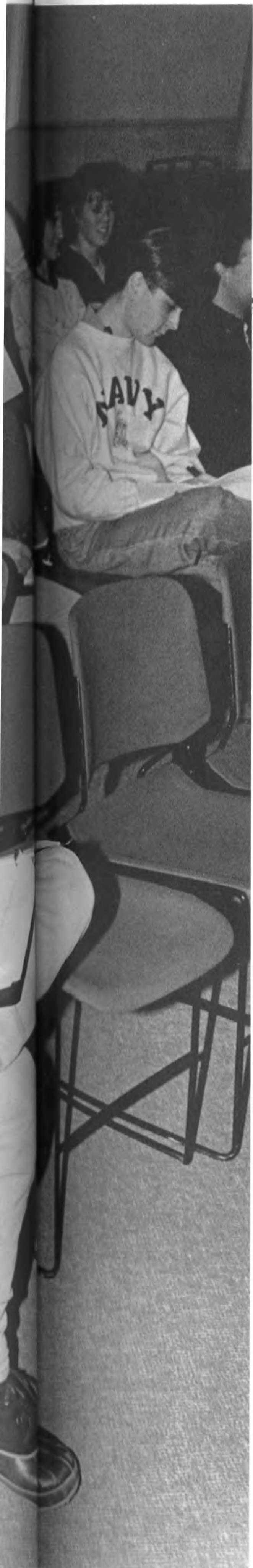
Players prepare for a basketball scrimmage in SAC. Basketball courts were widely used by students of Georgia Tech. *Photo by Matt Damrau.*



Two Ambassador selectees write and organize important comments made by the president of SAA. To be selected as an Ambassador, one has to have a very positive attitude about Tech. *Photo by David Pauli.*



Ambassadors listen to their president as he informs them about new tour routes to use. One of the Ambassadors' responsibilities was to conduct tours of the Georgia Tech campus. *Photo by David Pauli.*



Representing Tech's Lifestyle

The Ambassador program represents Tech students to alumni and other vistors

Acting as a link between students, administration, alumni and the Atlanta community at large, the Ambassadors have represented the many facets of Georgia Tech since the creation of the program in the spring of 1989. The Ambassadors, a committee of the Student Alumni Association, was composed of dedicated students with leadership and communication skills, knowledge of the Institute, and enthusiasm about promoting Georgia Tech.

> *"I enjoy doing this. It's lots of fun. It gives me an opportunity to interact and meet a lot of important people."*
>
> *-Victoria Selfridge*
> *Sophomore, ChemE*

The group gave tours of the campus to visitors and worked with various campus organizations in order to aid student recruitment. They also served as hosts at hundreds of Tech-related events, such as the dedication of the Bill Moore Student Success Center.

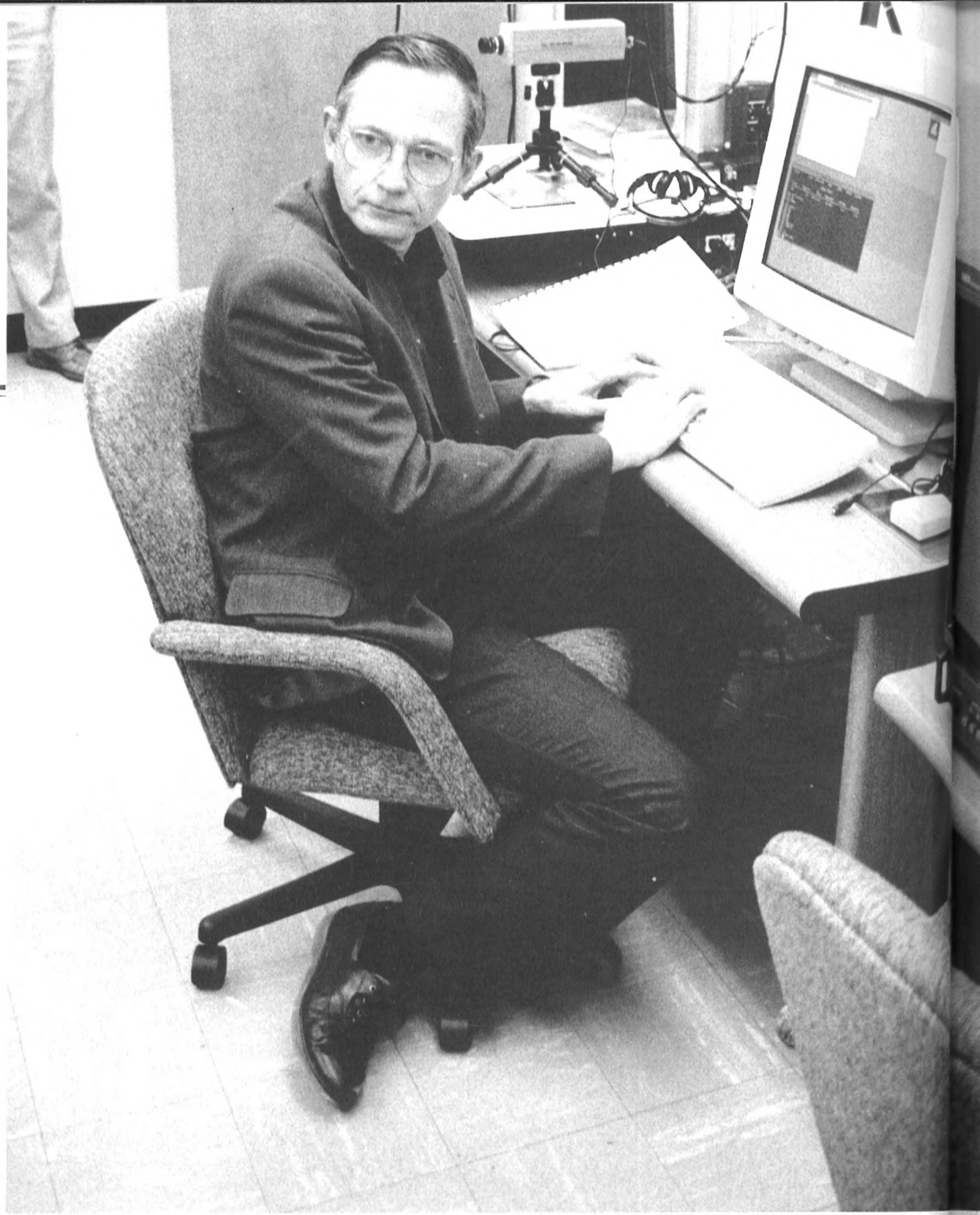
Ambassadors worked closely with the Student Alumni Association by attending club events, acting as hosts and greeting visitors at the President's box at football games, sponsoring presentations about the upcoming Olympics, and greeting people coming into Atlanta for the Super Bowl. They also aided SAA in other events such as the Adopt an Alumni program.

Ambassadors were selected annually in the spring through an application process, which included an interview panel consisting of students, alumni, and Georgia Tech staff. Good academic standing, participation in extra-curricular activities, a combination of a positive attitude and eagerness to represent Tech, and public speaking and interpersonal skills were all important factors in becoming an Ambassador. The Ambassadors were given the opportunity to participate until their graduation . The number of candidates was based on the number of seniors graduating and the need at the time as determined by the Ambassadors Executive Board.

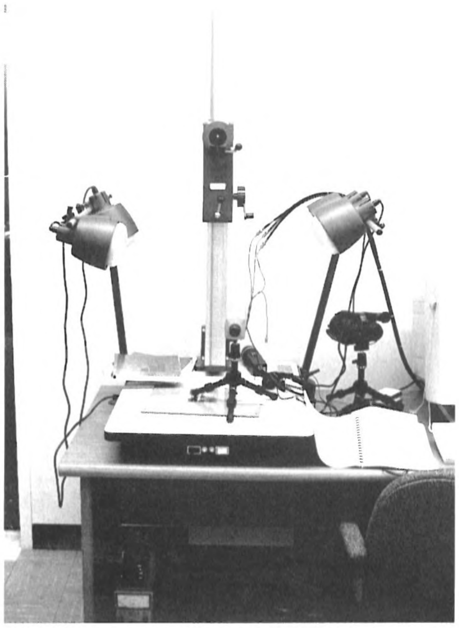
In promoting Georgia Tech to the outside world, the Ambassadors created public awareness about the different activities that the students of Tech participated in. Also, through their actions, they kept the alumni in close connection with the various programs created by the administration. The Ambassadors served as important representatives of Georgia Tech's diverse student body.

by Stacy McAnnaney and John Lindsley

These two Ambassador members are in a meeting with the Student Alumni Association. The Ambassadors worked very closely with the Student Alumni Association. *Photo by David Pauli.*



Sophisticated camera equipment is used in experiments to help improve the quality of audio and visual signals. The DSP lab had other equipment used to improve multimedia applications. *Photo by Matt Damrau.*



Ron Schafer begins his DSP experiment. He started the DSP program at Georgia Tech. *Photo by Matt Damrau.*

Professors James McClellan and Russell Mersereau look at the binary code displayed by the computer. Binary code and algorithms were essential to filter out unwated material. *Photo by Matt Damrau.*

Modernizing Audio Visual Data

Students research ways to improve the technology of multimedia applications

Georgia Tech had one of the highest quality digital signal processing labs in the country. Digital signal processing used math and computers to change audio and video data into digital codes that computers could read. The computers read in the data in a binary code and used algorithms to filter out the unwanted material. Then they changed the code back into a form useful to humans for the particular application. Digital signal processing started using computers in the 1960's but did not become a useful technique for filtering data until the mid-seventies because the applications used in the 1960's were not able to run at a speed where digital signal processing was a useful technique.

> *"DSP would revolutionize the multimedia world. It would be the ultimate invention."*
> *- Bob Blanton*

The digital signal processing lab was started at Georgia Tech by Ron Schafer. Ron Schafer graduated from Massachusetts Institute of Technology and was involved in the DSP laboratory there. He also worked in Bell Labs in their DSP division. His work in the Georgia Tech digital signal processing laboratory focused on the improvement of the algorithms and computer techniques used in processing the signals. The improvement of these techniques could result in faster produced, clearer data. Eleven internationally recognized professors, five engineers, and sixty Ph.D. students conducted research in the digital signal processing lab. Millions of dollars were invested in the research equipment. The DSP lab concentrated primarily on the mathematics and computing behind DSP and the multimedia applications of DSP.

Its many applications included data compression, hearing aid refinement, higher quality CDs, and many other multimedia applications. For data compression, the computer sifted through the data, taking only the relevant and useful information. For hearing aid refinement and CDs, computers would filter out unwanted background noise for a clearer quality product.

by Derek Westfall

Entering data into the computer, a graduate student analyzes the results. Computers have played an important part in DSP. *Photo by Matt Damrau.*

Searching for A Cure

Tech's research into AIDS and cancer makes progress in finding cures

The Boggs Chemistry building was known to have many labs where school work and projects took place. However, many Tech students were probably unaware of the important discoveries that were being made there. In several of those labs, researchers worked painstakingly towards finding cures for some of humanity's most feared diseases. Funded by the National Cancer Institute, a division of the National Institute of Health, the research done was for the sole purpose of synthesizing compounds which might have an affect against cancer cells and against the virus that causes AIDS, the Human Immunodeficiency Virus (HIV).

Researching a cure for cancer was "more difficult" according to Dr. Leon Zalkow, the principal investigator directing both the AIDS and cancer projects. The basic procedure was growing the cell cultures, observing their effect on animals like rats, and their enzymes, and then performing clinical studies in humans. Whenever compounds that had promise were discovered, they were sent to the National Cancer Institute, in Washington D.C., where they underwent continuous screening. The results would then be sent back to the Tech labs and analyzed. If necessary, modifications were made according to the results.

Cancer research began in 1979 and was divided into two main projects. One group worked on obtaining a cure from natural substances, plants and animal parts such as rattlesnake skin. Their recent work involved plants from China. The process of isolating the different plant components was called "structure elucidation." An example of a successful component was tanines, compounds which were abundant in the Rhus galabra plant. The group conducting this research worked in coordination with the Arizona Cancer Institute, which was responsible for most of the biochemistry work. The other group within the cancer research department worked on synthesis of certain compounds which were believed to have a positive affect. Current work involved quinones, compounds which had been proven to have general effects on all types of cancer.

The AIDS project started in 1988 and was slightly more successful. Researchers hoped they had come up with a compound that would be efficient enough for pharmacologists to use in two or three years. A certain azo dye was found to have effects on HIV, but further modifications were needed before it could be made safe for human use. The compound responsible for causing the activity was quinobene. Dr. Zalkow wrote a paper on the compound for the *Biochemical and Biophysical Research Communications* journal.

> *"Researching cancer is more difficult, as cancer does not have a single causative agent."*
> - Dr. Leon Zalkow

Although the possibility of a cure for both of these deadly diseases was still only a distant goal, the researchers continued to be hopeful and their discoveries were promising enough to be their motivation.

by Samiha Bhatti

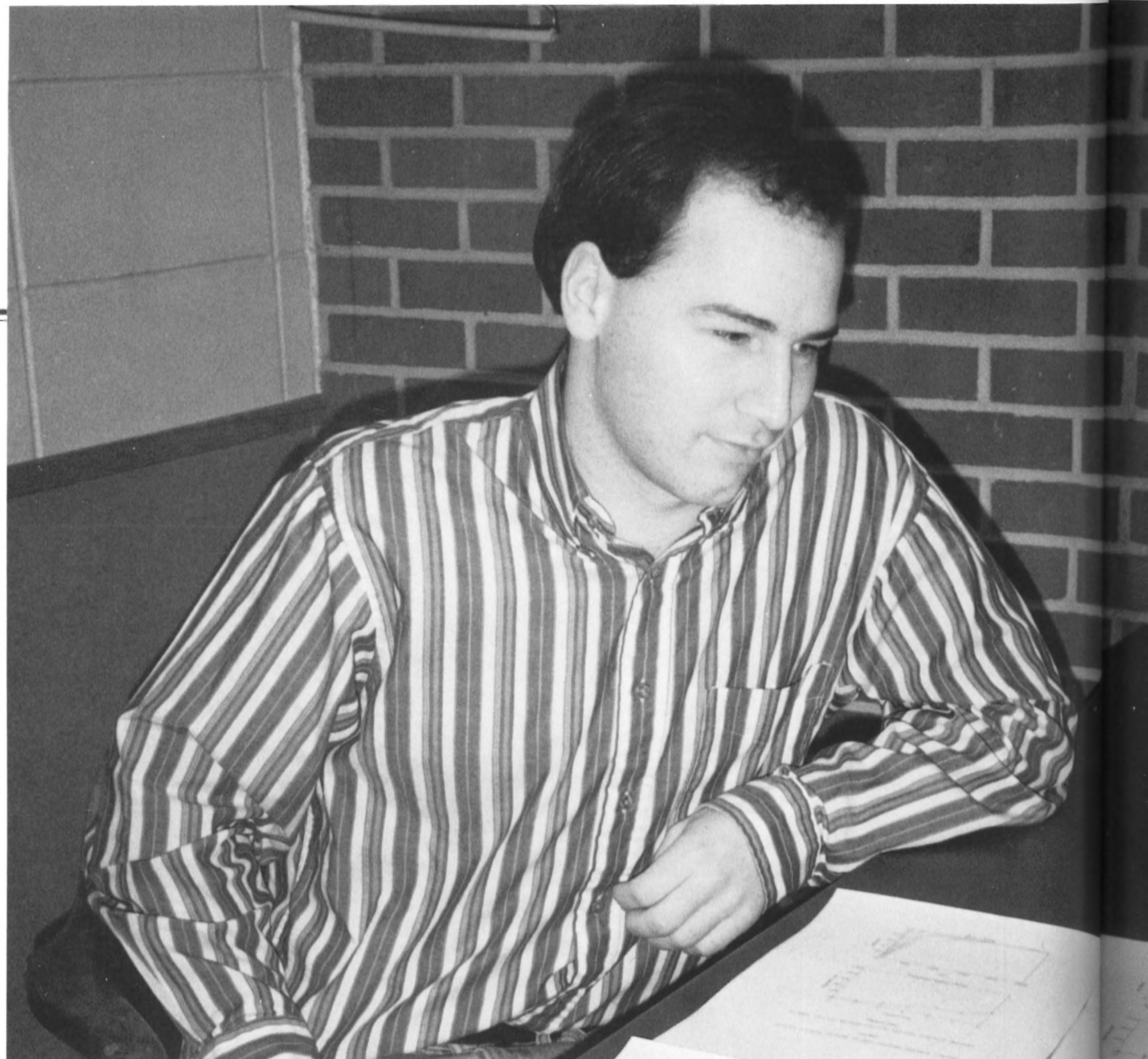
This graduate assistant operates the delicate equipment for medical research Equipment such as this was used in the reseach for a cure for AIDS and cancer. *Photo by Joel Helms.*

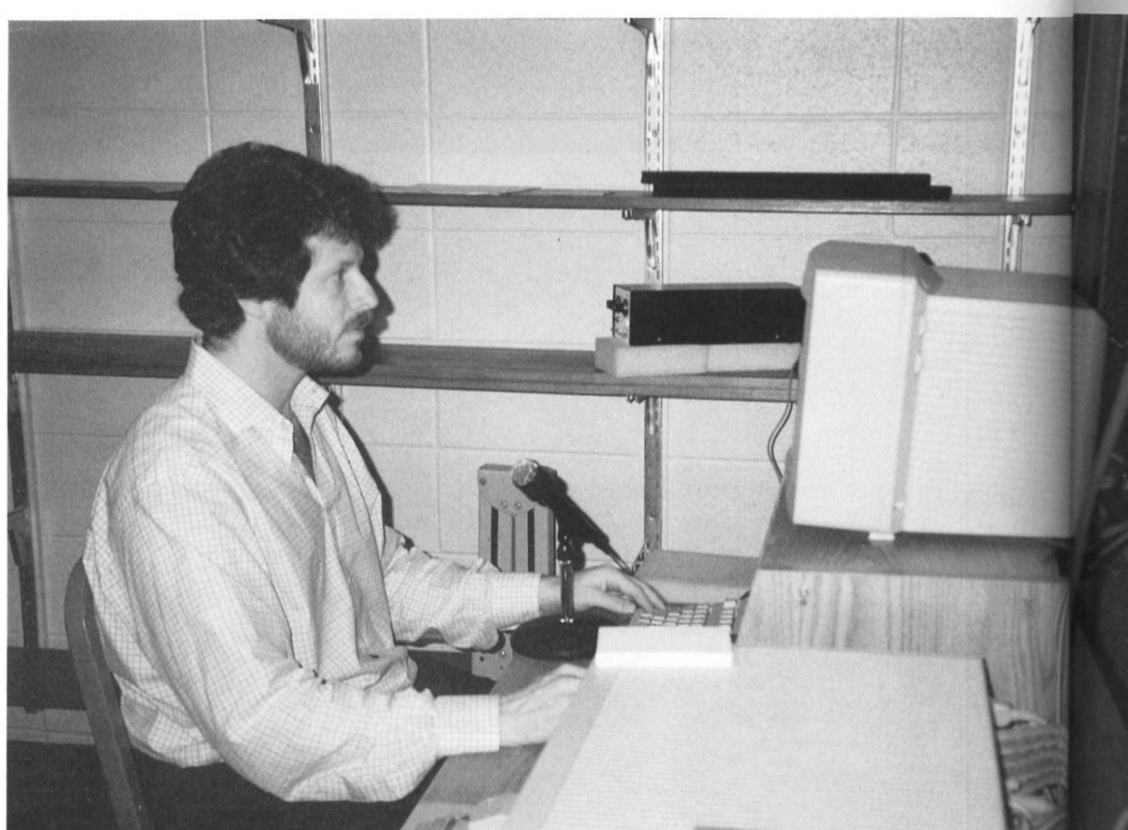
This person enters important research data onto the computer. The computer was an indispensable tool in this important research. *Photo by Joel Helms.*

Working with a centrifuge, a researcher waits eagerly for the results. Medical equipment was used in research in the fight against AIDS and cancer. *Photo by Joel Helms.*

Alan Kersten looks over a lab report. He was part of Dr. Simon's team to study human memory retention. *Photo by Stephen Burr.*

Jonah Lunken demonstrates how the experiment is conducted. The computer was used along with a microphone for the experiments. *Photo by Stephen Burr.*





Students Aiding Research

Psychology students allow themselves to be guinea pigs to further research

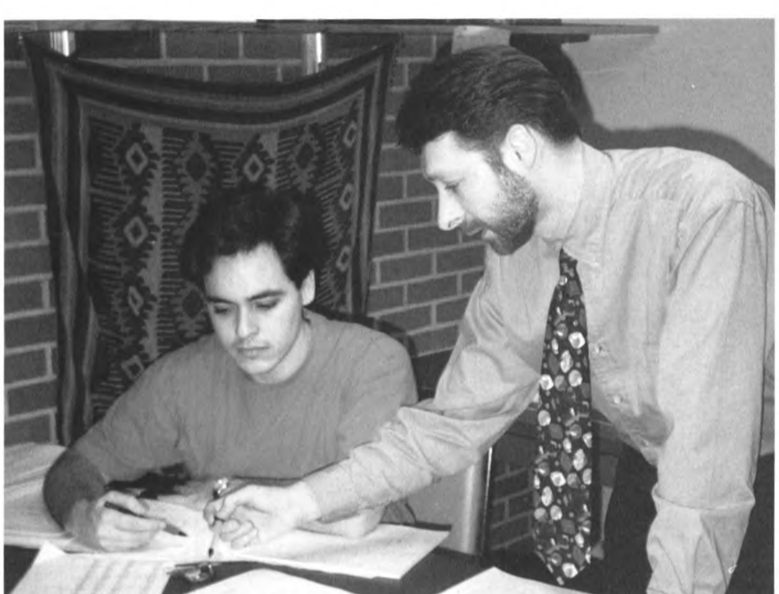
A large number of the schools at Tech offered labs that students could attend. These labs would give the students the opportunity to apply the knowledge that they had learned. The School of Psychology was one such school where textbook learning was not considered enough and actual hands-on experience was necessary. However, due to the large number of psychology students and the lack of space, there were no labs for most psychology classes. Therefore, in the place of labs, students were given the opportunity to participate in psychology experiments conducted by the faculty. In compensation for their participation, students would receive extra credit, usually applied towards their final grade. In the Skiles building, a sign-up board was always in use.

> *"Understanding[set recollection from memory] might lead to some interesting applications."*
> *- Dr. Tony Simon*

One particular experiment involved the task of enumeration, how many of a set of simple objects a subject could be presented with and later recall. The studies found that retention of sets of up to four or five objects would be remembered easily, but remembering larger sets became increasingly difficult. Dr. Tony Simon, the faculty advisor for the experiment, stated that the data gathered led to the discrediting of an old theory. The theory had held that humans recognized canonical patterns and that objects would be percieved as part of that pattern. One item was a dot, two made up a line, three a triangle, but after that the ability failed, and people would not be able to remember four or more. The findings from the experiments proved that this was not the case, as some people could remember four, five, or more items easily.

Other experiments were open for students participation. One dealt with people and their interaction with computers. The automatic detection of user transitionality in human-computer interaction experiment dealt with the subjects playing the computer game Minesweeper for the very first time. Experimenter Paulo Santos recorded the different strategies the subjects used to win the game. Another experiment dealt with the structure of memory. It tested the subjects ability to recall word pairs they had learned. The subjects were also required to make predictions on how accurately they felt they could recall the word pairs.

by Derek Westfall



Results of the experiment are debated between Angel Cabrera and Dr. Tony Simon. The work uncovered interesting facts about how humans remember things. *Photo by Stephen Burr.*

Responsibility Breeds Success

Self-management provides the key to OMED's efforts to improve the performance of minority students

Founded in 1979, the Office of Minority Educational Development (OMED) worked towards the goal of ensuring that minority students enrolled in Georgia Tech, and that once enrolled, those students had the chance to enjoy academic and social success in their endeavors. Through recruitment efforts, advocacy programs, tutorials, volunteering as mentors and counseling students, OMED aided minority students by providing a strong support base and helping them adjust to the Tech experience.

Before 1990, OMED concentrated not only on recruitment and academic issues, but on social issues such as racial discrimination. However, because minority student retention and performance records were far below the campus average, it was decided to change the focus of OMED's efforts. OMED shifted its operating paradigm, adopting a systems view and process focus and raising academic expectations. The office worked to increase minority performance and persistence rates and to prepare minorities for graduate studies or careers in engineering and science. OMED facilitated academic strategy development by student grouping and teaming as well as parent and family involvement.

After the shift in operations, OMED's programs were divided into three categories: pre-season, regular, and post-season. Pre-season programs focused their efforts on entering freshmen and included Fall Orientation Week, Dual Degree Orientation, and CHALLENGE, a six-week orientation program designed to give incoming freshmen a chance to adjust from high school to college life. Regular season programs included summer experience, team coaching, academic enhancement, and family success. These programs helped students excel academically while at Tech.

Finally, post-season programs like Opportunities Network and the Annual Performance Celebration were designed to encourage students to excel and prepare for life after undergraduate school.

Gavin Samms, the current director and managing partner of OMED, emphasized the importance of Total Quality Management in shaping the office's direction and for providing an environment where minority students could learn to make their own decisions through self-management. Though he stressed OMED's main priority as the improvement of minority performance and retention, Samms hoped that, in the long run, OMED would have a universal impact on education, not only for minority students, but for all students.

> *"Our purpose is to create a culture that expects excellence and provides an environment where students can become effective self-managers."*
>
> *- Gavin Samms*

by Ina Heung

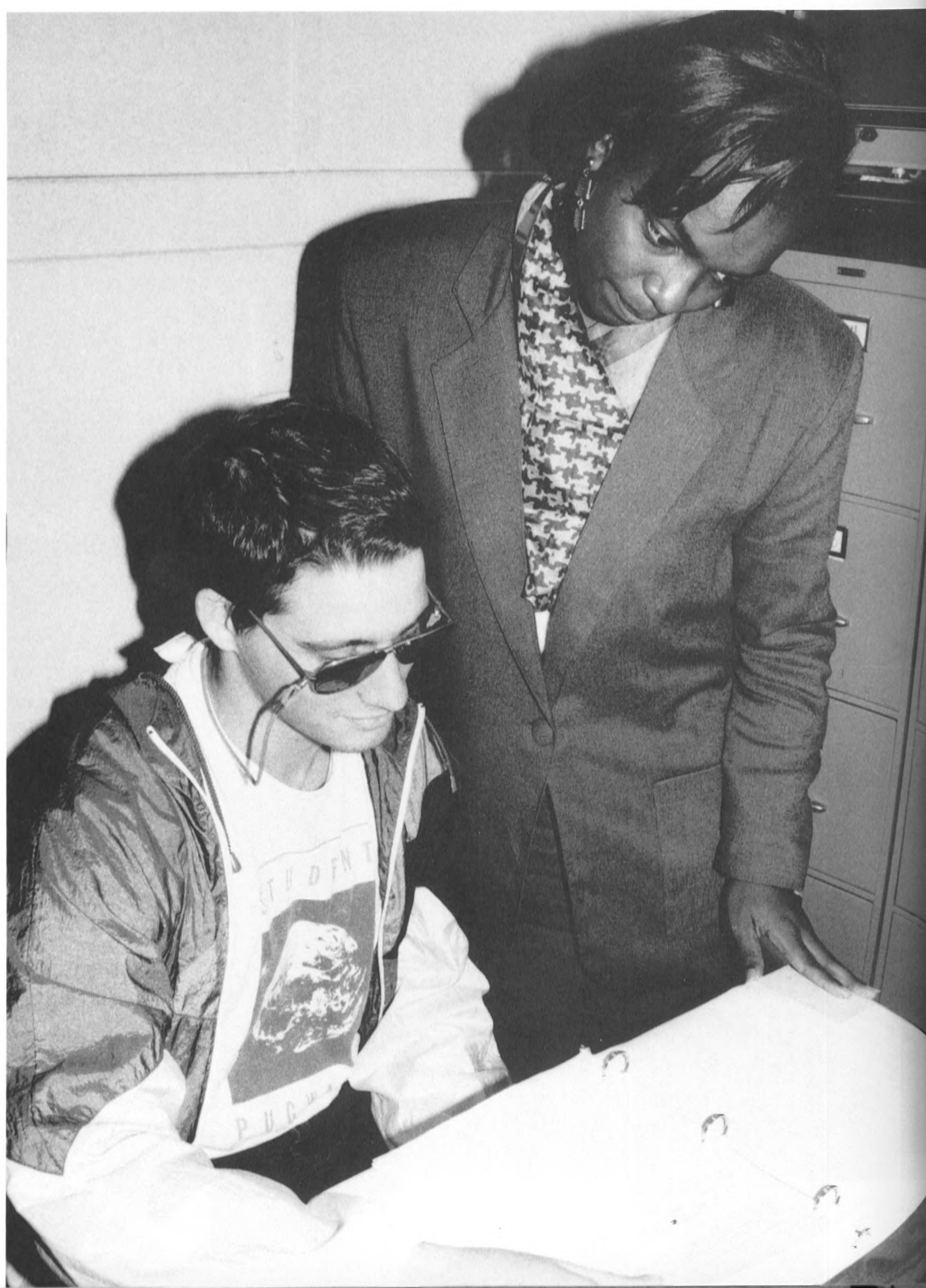
Chris Rice discusses an English paper with Mona Meddlin as Tobias Rice looks on. OMED sponsored many tutorial programs to aid minority students. *Photo by Felix Vicente.*

Working together, Jennifer Stanford and Taro Walcott tackle their homework. The programs supported by OMED encouraged improvement in minority student retention. *Photo by Felix Vicente.*

Vincent Watson debates with David Sulliman on how best to answer a math problem. Student grouping and teaming were strategies used by OMED to improve grades. *Photo by Felix Vicente.*

Advisor Wayne Thompson explains procedures to Scott Boden. The co-op office accepts only those students who meet their high standards. *Photo by Allen Turner.*

Melissa Joiner answers the phone at her job. Co-op students enjoy the benefits from both the worlds of academia and the workplace. *Photo by David Sanchez.*



Tina Payne looks over Nikhil Kamat-Mhamai's shoulder as he examinies different job opportunities. Many companies recruited students from the co-op program every year. *Photo by Allen Turner.*

Getting An Early Start

Cooperative education gives students the opportunity to preview the world

Were you looking for a competitive edge that will help you get a job after you graduate? Did you want to know what people in your major really did at the office? Did you need a little extra money to help pay for tuition? Co-oping helped students in all of these areas.

The Cooperative Education program, which was patterned after a co-op program started at University of Cincinnati in 1906, was introduced to Tech in 1912. The co-op office currently deals with about 500 companies in 35 different states. Co-ops made, on the average, $1,550 a month. This increased each quarter, or each year, depending on the corporation.

"I love this job because I was a co-op... It is the best way to go through college."
- Ken Little, advisor

A student could apply for the program while still in high school, or he or she could wait until after attending classes. An applicant could not make a grade lower than a "C" in all classes and must have at least a 14 hour course load per quarter. A student could apply until the first quarter of the sophomore year. Once in the program, a "C" average had to be maintained, no grade lower than a "C" was accepted in mathematics or science courses, and participants had to meet with an advisor each quarter.

The advisors acted as middlemen between the companies and the students. Ken Little, the advisor for Mechanical Engineering, Textiles, Textile Engineering, Textile Chemistry, Nuclear Engineering, and undeclared engineering majors, stated, "I love this job because I was a co-op student, then I hired co-op students with a company, and it [co-oping] did so much for me. It is the best way to go through college." Many advisors agreed that they enjoyed their work because they helped students discover their career interests.

Many companies recruited co-op students at Tech from all over the country. Each quarter, the co-op office sponsored "Co-op Interview Days." During this time, company representatives came to campus and interviewed students for various co-op jobs. Also, there was a student accessible database that had a list of all the companies that were currently recruiting Tech students. The database listed what type of work would be done, the minimum grade point average required, the location of the job, the quarters that co-ops were needed, the majors that the company was recruiting, and the number of quarters that must be completed before applying for the job. The database made it easier for students to keep up with co-op job opportunities.

Many benefits existed in choosing the cooperative education path. Advisor Mary Gordon Baines said that the co-op program "gives work related experience, career direction, discipline and a look into the real work world." "It allows you to implement theory and see how it applies to real world problems," said advisor Karen Thacker. Though the advisors could find no disadvantages to the program, they agreed that it was not for everyone. Some students did not like having school interrupted to go to work every other quarter. Some of the jobs were located outside of Atlanta and required the student to move every quarter. Most students were able to find work according to Tom Akins, director of the co-op program. Those that were not placed usually limited themselves in job opportunities by not having flexible schedules.

The co-op program offered a variety of opportunities for students to acquire job skills and real world knowledge of the work place.

by Alison Russell

Adrian Feagin gets advice about possible careers from Karen Thacker. Students join the co-op program to gain valuable experience for the future. *Photo by Allen Turner.*

Managing Student Needs

The Office of Information Technology takes care of the computing requirements of Tech

Located nearly at the center of the campus, the Rich Building housed the vast computer network necessary for an institute the size of Georgia Tech. The Office of Information Technology administered these services so as to provide the college with the resources required for modern computing, networking, and research capabilities.

Most students' experience with OIT involved the activation and distribution of computer accounts. These accounts were established for every enrolled student, and for each faculty and staff member. Usage involved electronic mail, information storage and retrieval, homework, class projects, and extracurricular activities.

OIT maintained several computer clusters throughout the campus, one of the more recent additions being located in the Student Center. These resource centers were tuned to the needs of the student body. Various different software packages were available, and were distributed according to the types of computers in the clusters. These stations ranged from DECstations to SUNstations to MAC O/S machines, along with IBM PS/2s and NeXT workstations.

Users that had special requirements could go to the Evaluation/Resourse Center located in the bottom floor of the Rich building. There, more powerful computers could be accessed with a special assortment of software tools, along with items such as CD-ROM drives and text scanners.

The Sequent S81 computer, "Hydra," was originally purchased in 1988. Over the years it was upgraded to handle ever increasing workloads. However, after finally reaching the end of its useful lifetime, OIT purchased a replacement machine. The Sun Microsystems SPARCcenter 2000 machine named "Acme" was scheduled to come on line at the end of fall quarter. Acme could initially handle twice the load of hydra, and it had six 50-Mhz processors, eight megabytes of non-volatile RAM, and sixteen 2.1 gigabyte hard drives.

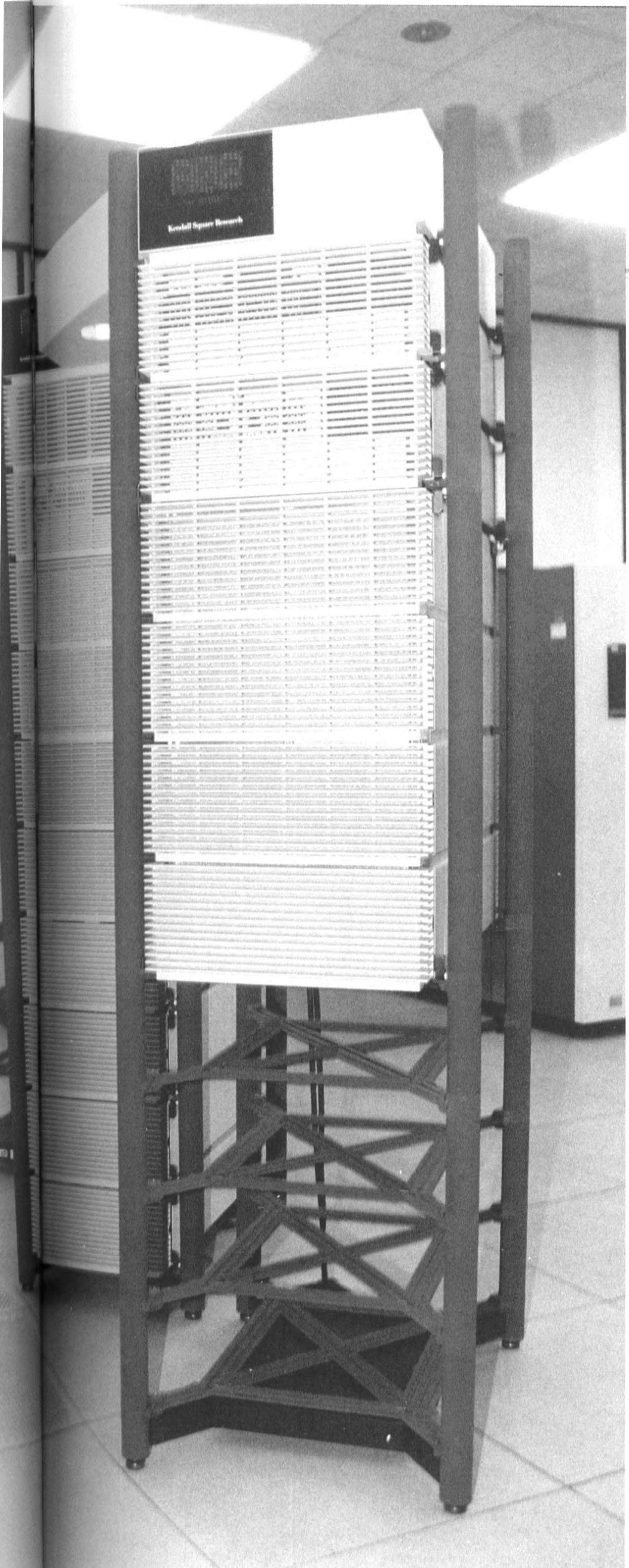
> *"I spend a lot of time in the [computer] clusters working on homework assignments."*
>
> *- Jacob Richter*
> *Sophomore, EE*

As the computing needs of Georgia Tech continued to increase, the Office of Information Technology would strive to maintain the high standards necessary to keep computing services readily available at all times.

by Stephen Burr

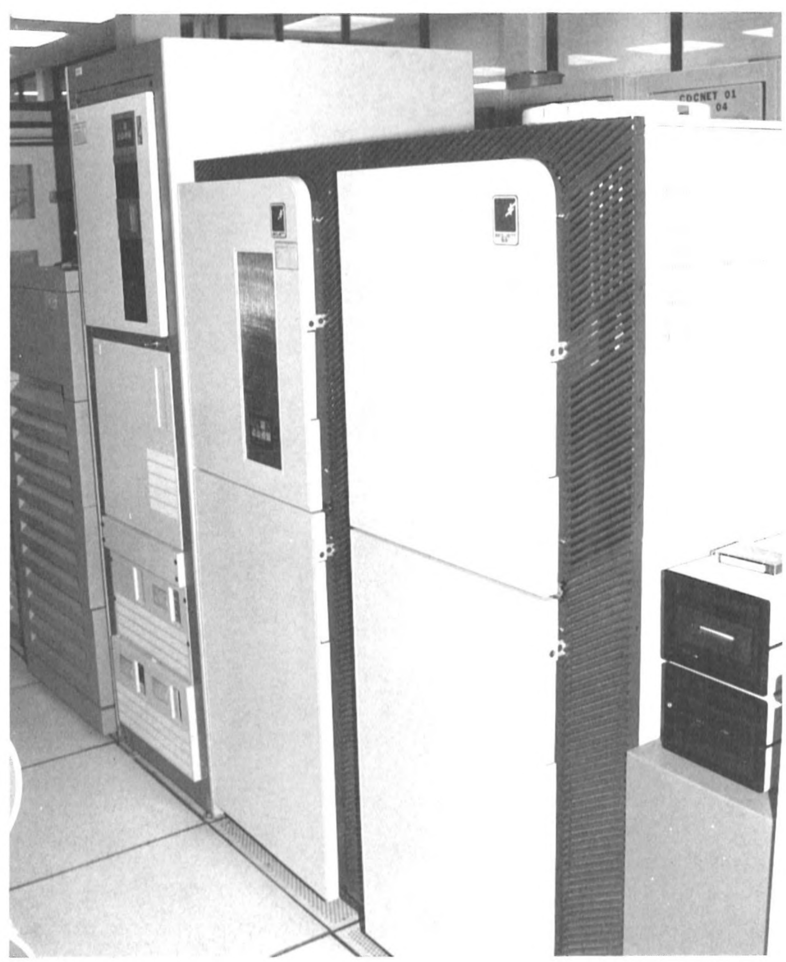
Scott Miles prepares to scan a document into the memory of this Macintosh. The Evaluation/ Resource Center was useful in that students could use computer materials not available on a campus-wide basis. *Photo by Todd Sleeman.*

The KSR-1, or "Peregrine," is an experiment in parallel programming and resides in the machine room at the Rich Building. Many different computer systems are utilized for campus use. *Photo by Todd Sleeman.*



At IBM systems support, Paul Goodwin is always kept busy. The network was always monitored in order to ensure all systems ran smoothly. *Photo by Todd Sleeman.*

The Sequent S81 system has reached the end of its lifetime. "Hydra" was scheduled to be replaced by "Acme" by the end of fall quarter. *Photo by Todd Sleeman.*



Reaching For The Stars

Solid propellant research opens new doors and benefits to all concerned

During the first two minutes of flight, two solid rocket boosters located behind the space shuttle on either side of the external tank lifted it out of the earth's atmosphere. These solid rocket boosters used about one and a half million pounds of propellant to accomplish this task, but the thrust was actually created by many tiny reactions inside each booster.

The School of Aerospace Engineering studied the fundamentals of this solid propellant combustion. A research team, headed by Professor Edward W. Price, recreated these small reactions and studied them for certain characteristics. Professor Price studied solid propellent research at Georgia Tech since 1974. The team consisted of Dr. Robert K. Sigman, a research engineer, Satya R. Chakravarthy, a graduate student, and Beth Zachary, a junior undergraduate student.

Dr. Sigman was in charge of a computer program that simulated the burning of methane and air. The immense size of this program demanded the use of a supercomputer for the program to run efficiently. Dr. Sigman had access to a supercomputer by timesharing with the National Science Foundation, the Pittsburgh Supercomputing Center, and the Naval Oceanographic Center in Mississippi.

Satya Chakravarthy, with help from Beth Zachary, created "sandwiches" that they used to burn and study. These "sandwiches" were a miniature version of the fuel in the Space Shuttle solid rocket booster where the oxidizer particles mixed with the binder and solidified. The sandwiches resembled the fuel located between particles of oxidizer. These "sandwiches" consisted of a layer of rocket fuel between two thin layers of oxidizer, in this case, ammonium perchlorate.

The sandwiches were placed in a combustion-bomb instrument where the pressure was raised normally to about 1000 psi. Then, the sandwich was photgraphed as it was lit and almost completely burned. Right before it burned, the chamber depressurized at a rapid rate. This extinguished the flame and left an unburned portion of the sandwich, called a quenching sample which was gold-coated to enhance its picture under the scanning electron microscope where it was studied. The thin layer of fuel was the main point of interest because the burning pattern found could help explain the characteristics of the fuel. Most experiments were videotaped and used to study the characteristics of the burning of the flame which could help discover fuel characterics.

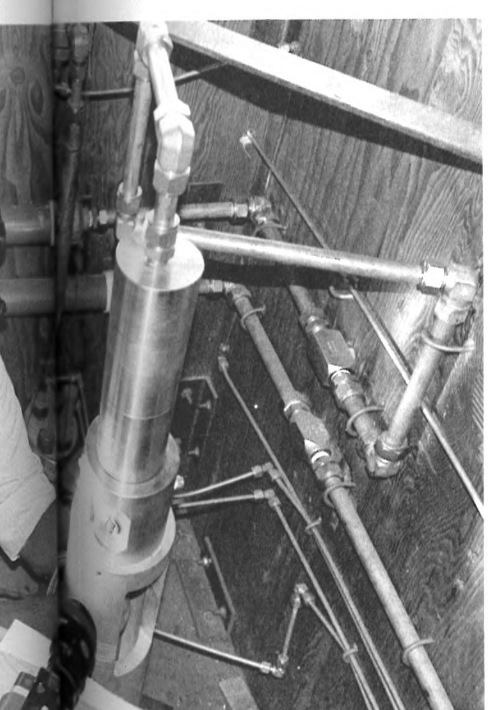
> *"The research is really exciting. Undergraduates just don't get this opportunity at the drop of a hat."*
>
> \- Beth Zachary
> Junior, AE

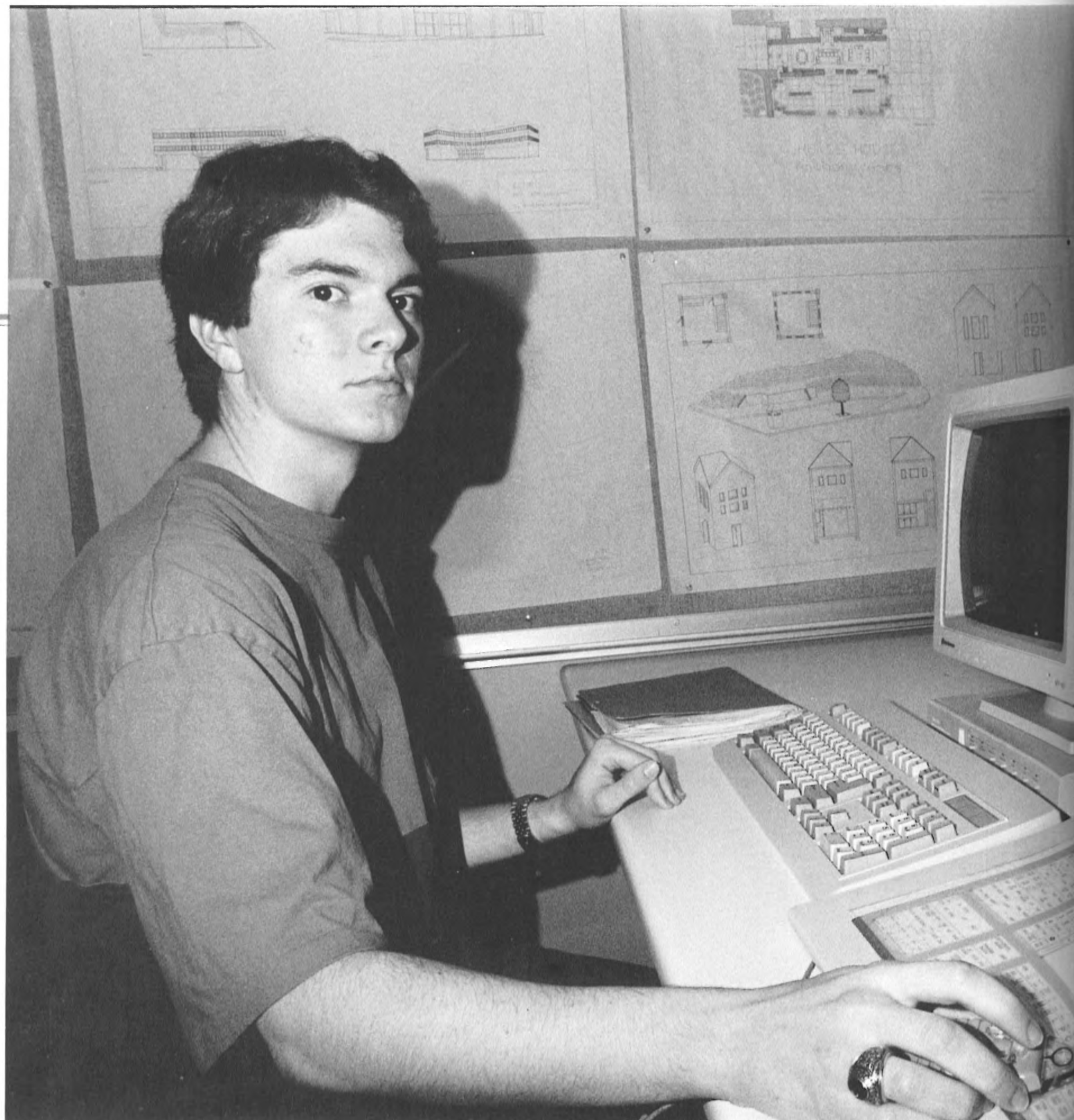
by Wendy Hynes

Professor Edward W. Price discusses the research of solid rocket propulsion. From 1986 to 1988, he was on the Academy of Sciences Panel for the redesigning of the Space Shuttle's Solid Rocket Booster after the Challenger accident. *Photo by Allen Turner.*

Beth Zachary prepares one of the "sandwiches" for an experiment. The fuel cells resembled the solid rocket boosters that were used to lift off the space shuttle, but on a smaller scale. *Photo by Joel Helms.*

Satya Chakravarthy starts filming the experiment. The recordings were used to study the flame from the propellant. *Photo by Joel Helms.*

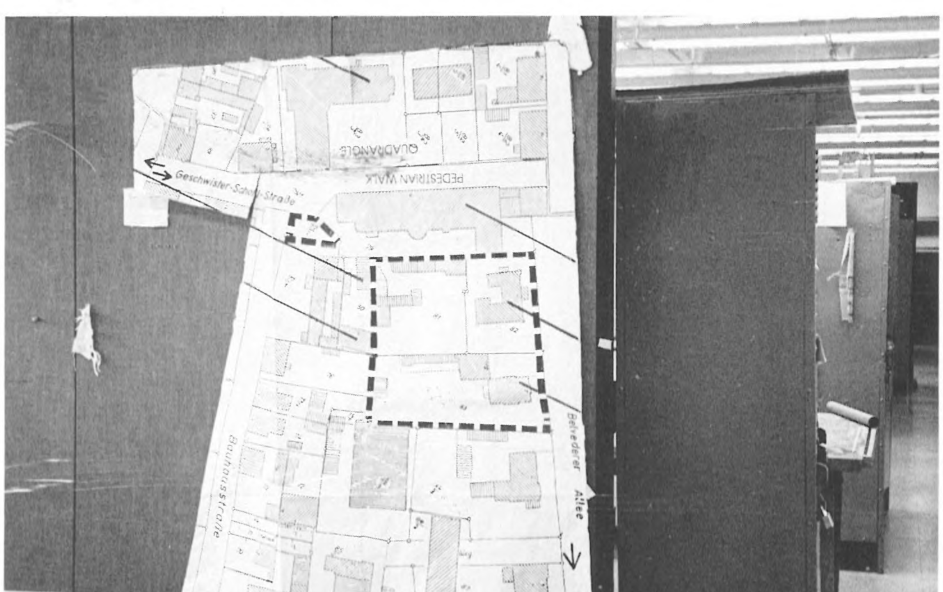


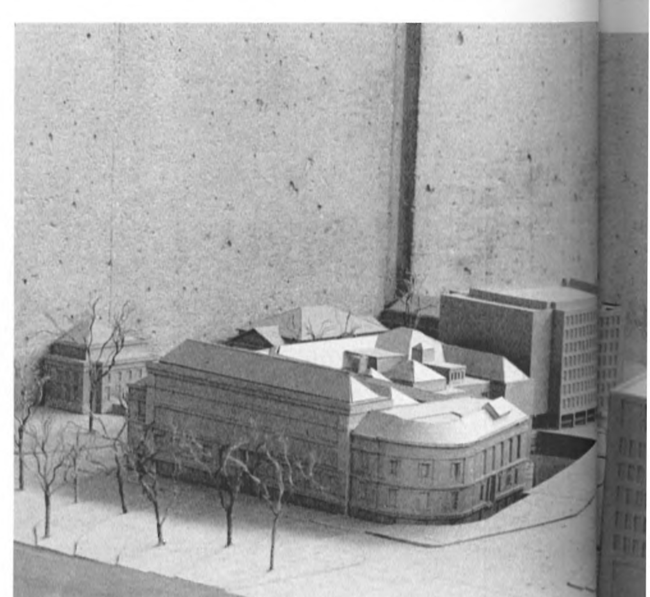


Martin Poteralski demonstrates the 3-D modeling equipment in the architecture computer lab. Three-dimensional design techniques would cut time requirements, allowing more time for creativity. *Photo by Chris Scholz.*

The use of models has always helped architects in their work. Modern computer equipment would take the designer through the diagram without ever constructing anything. *Photo by David Burt.*

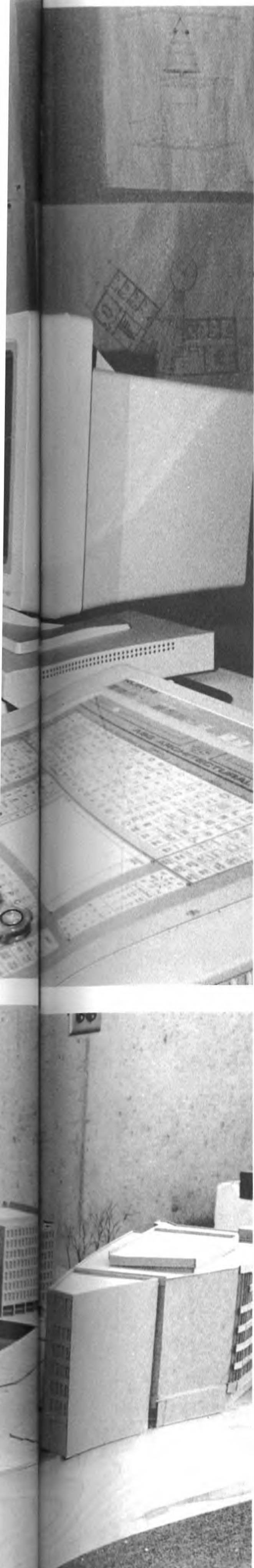
A layout like this could take days if drawn out by hand. With computer design programs, the same print would be ready in a few hours. *Photo by David Burt.*





Perfection Through Design

New technologies allow for greater freedom and versatility in the area of architectural design



When most people heard of three-dimensional (3-D) modeling, they thought of small cardboard buildings that architects used to present their work to a customer. However, 3-D modeling was actually a technique using computer graphics to represent something that was either too large to be visualized from a set of two-dimensional drawings, such as architecture, or too small to be seen by the naked eye, such as the structure of a water molecule.

> *"The system sounds like it should make drawing up designs a whole lot easier."*
> *- Kim Bailey*
> *Freshman, ARCH*

While computers in architecture could be used to generate plans and 3-D models of those plans, that was not the primary use. There were enough building plans in the world to be used again and again and never draw a new design. The point of architecture, however, was to be creative and to use that creativity as a way to invent innovative new building styles.

As a presentation tool, computer models were invaluable. The ability to give to a potential client a computer mouse and allow them to "walk" through their completed building with the requested color schemes, wallpaper, and furniture in place, along with views from the windows, would give a company a much better chance at getting a contract. A computer model of the "Olympic Atlanta" helped tremendously in winning the right to host the 1996 Olympiad. The judges were impressed by the use of the 3-D computer modeling to simulate flying through the Atlanta of the future.

Another area used in computer modeling was exploration. On a drafting board, hours of hard work brought a single drawing. On a computer, the same amount of work brought a similar image, yet entire sections could be changed, removed, or rearranged with a few keystrokes. These methods of experimentation with different floor plans in 3-D mode virtually ensured customer satisfaction because the entire building was seen before construction even began.

Uses other than architecture existed for 3-D computer modeling. It could be used to study the structures of molecules and the way they fit together and reacted to one another. Military uses included models of landscapes in tank and airplane combat simulators. The entertainment industry took advantage of this new technology as well. Some video games have been directly translated from military simulators. Movies such as Terminator 2 used them to create footage that would be difficult or even impossible using conventional methods.

by Chris Foster

The architecture building houses many labs used for design and construction studies. The College of Architecture produced many fine graduates year after year. *Photo by David Burt.*