



GEORGIA TECH

Alumni Magazine ■ SPRING 1990

A Conversation with Sam Nunn

Also Inside

- Gorbachev's Revolution
- Democracy in China's Future?
- Peak Performance
- Office Automation



ip20

Simplicity Driven To Perfection

Perfection is an absolute term, but that's what you get with custom designed IP 20 office systems. Every dimension of every part of an IP 20 office system is based on a multiple of 20 millimeters. Simple. That means all parts are interchangeable for ease of installation, configuration and reconfiguration. Perfection.

The applications are virtually unlimited. From design studios to mail rooms. From reception areas to task areas. European style and German engineering offer the ultimate in functional design.

IP 20 Caseworks are processed for factory installation from IP 20's American headquarters in Marietta, Georgia. Best of all, IP 20 is affordable. That's what makes IP 20 simply perfect.

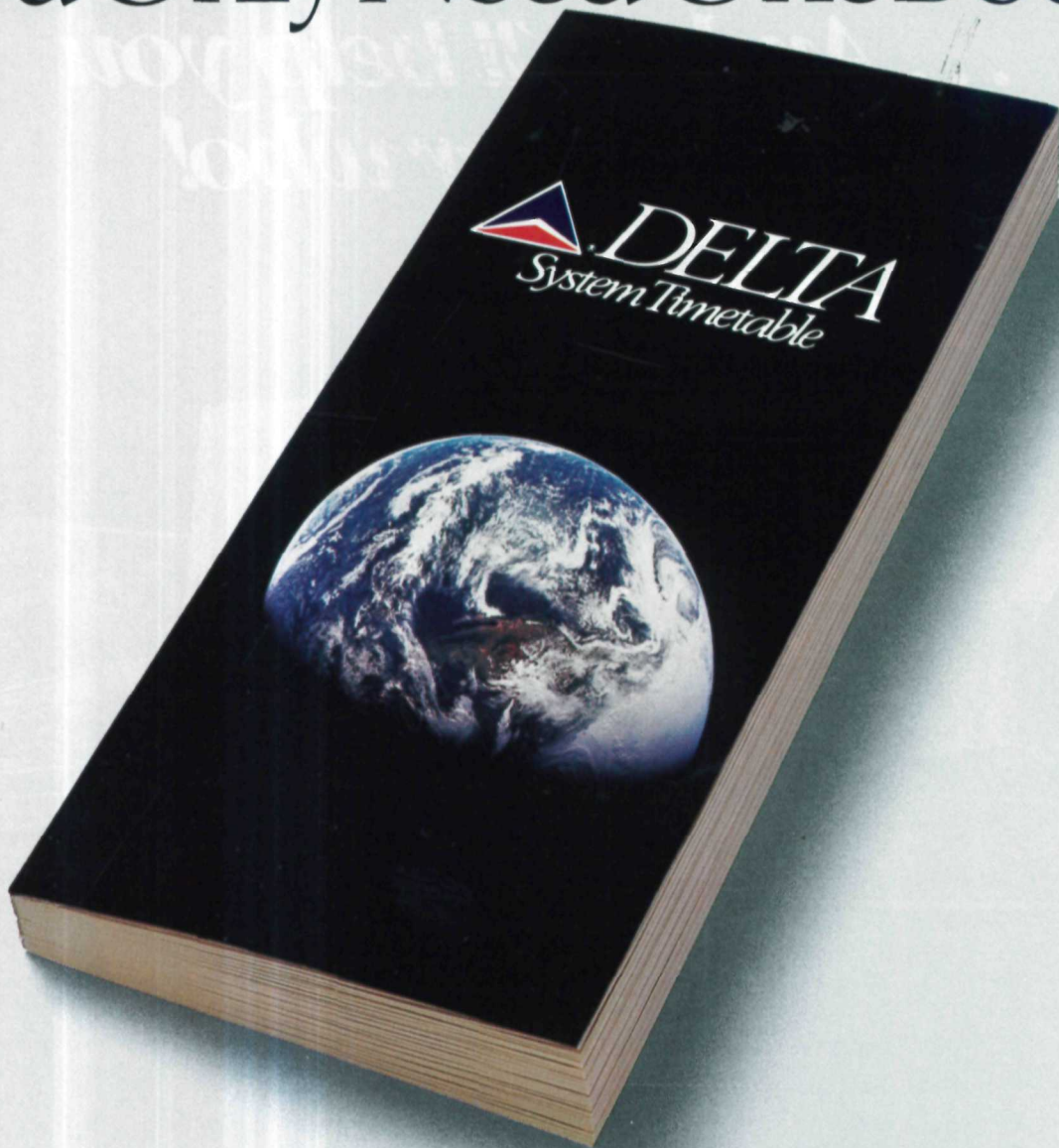


Ball Stalker Co.
OFFICE FURNITURE

The Designer's Source For Fine Office Furniture

151 14th Street (at the Downtown Connector)
Atlanta, Georgia 30318 (404) 876-8999

To Take Over 260 Courses, You Only Need One Book.



When it comes to air travel, this is the only reference source you need. Because Delta and The Delta Connection® can fly you to over 260 cities worldwide on more than 4,200 daily flights. And no other air-

line gets higher marks for personal service. Delta's had the best record for passenger satisfaction of any major U.S. airline for 16 straight years.* So, see your Travel Agent or call Delta. It's the best course you can take.

 **DELTA**
We Love To Fly And It Shows.®

*Based on consumer complaint statistics compiled by the U.S. Department of Transportation. ©1990 Delta Air Lines, Inc.

Remember when?
... And we'll help you
remember who!



And if you'll do your part,
we'll help others remember
you, too.

The 1990 Georgia Tech Alumni
Directory goes into production
soon. As the most up-to-date
list of all living alumni, it will
be an invaluable resource.

Only the number of directories
ordered will be printed, so
send your request for either a

hardbound or softbound copy
right away—and relive those
Ramblin' Wreck memories with
old friends.

**The 1990
Georgia Tech
Alumni Directory**
Drawing together good friends and good memories

GEORGIA TECH

VOL. 65 NO. 4

Alumni Magazine

SPRING 1990

STAFF

John C. Dunn, *editor*
Gary Goettling, *associate editor*
Gary Meek, Margaret Barrett
photography
Everett Hullum, *design*
Wayne Parker, *advertising*

PUBLICATIONS COMMITTEE

George A. Stewart Jr. '69,
chairman
W. Guy Arledge '71
Hugh A. Carter '64
Jack J. Faussemagne '65
Frank H. Maier Jr. '60
L. Gordon Sawyer '46

Georgia Tech Alumni Magazine is published quarterly for Roll Call contributors by the Georgia Tech Alumni Association. Send correspondence and changes of address to:
Georgia Tech Alumni Magazine
Alumni/Faculty House
225 North Avenue NW
Atlanta, GA 30332-0175
Editorial: (404) 894-4646
Advertising: (404) 894-2391
Fax: (404) 894-5113

On the Cover

Sen. Sam Nunn, once a Tech freshman, calls for greater emphasis on math and science for grade school children in an interview beginning on page 14.
Photo by Margaret Barrett

CONTENTS

A Conversation with Sam Nunn	14
Thoughts from Georgia's senior senator • <i>Written by Gary Goettling</i>	
Gorbachev's Revolution	21
Can the U.S.S.R.'s leader pull off his reforms? • <i>Written by John Dunn</i>	
The Tiananmen Massacre	28
Setback for China's democracy movement • <i>Written by Wan-Lee Yin</i>	
Peak Performance	36
For two Tech women, the view from the top is worth the climb	
Office Automation: Boon or Boondoggle?	42
Who's in control at the office, anyway? • <i>Written by Gary Goettling</i>	



FME/JOANNA PINNEO

A crumbling wall builds hope in Berlin, p. 21

DEPARTMENTS

Letters	3
Return of the rat cap; taking stock.	
Technotes	5
Stelson resigns; aid to the homeless; Candid Camera visits campus; Tech's flag orbits Earth; students "take over" administration; Wyckoff's lucky genes.	
Profile	50
Dr. Jerry Ginsburg: Challenging the unknown.	

© 1990 Georgia Tech Alumni Association

TAKING CARE OF THIS GENERATION. AND THE NEXT.



It takes more than love and good intentions to support and raise a family. You have to be smart, plan ahead, and make tough financial decisions.

C&S Bank is here to work with you every step of the way, from the time you first start out, to well after you retire.

We'll help you pay bills, buy a car or a house, send your kids to college, save for your retirement, and plan your estate to protect those you do things for.

We've helped families for over a hundred years. And we'll help yours.
From this generation to the next.



WHERE YOU
BELONG



©1990 The Citizens and Southern Corporation. Member FDIC.



OFFICIAL SPONSOR
ALUMNI MAGAZINE

LETTERS

The Rat Cap that Came Back

Editor:

My wife and I were cleaning out our attic in preparation for a move to Japan and discovered a rat cap among some of my father's college memorabilia. The name "Fradin" is written inside. Apparently, Fradin was a freshman at the time my father and his cohorts from the University of Florida assaulted Atlanta one weekend. I would guess that the cap was lifted during the late 1940s.

If you will, please attempt to return Fradin's cap. I extend my apologies to him for not discovering it sooner.

John M. Farrell Jr.,
IM '76
Atlanta

EDITOR'S NOTE: *The cap has been returned to its original owner in New York City, Dr. Seymour Fradin, an ophthalmologist specializing in retinal surgery.*

"I had a rat cap, but I don't know whatever happened to it," said Fradin, a member of the class of '46. "In '44 they drafted the whole school, and I think I may have left the cap behind at the dormitory in the rush to get home," he speculated. Fradin expressed his appreciation for Farrell's courtesy, and said that he plans to exhibit the cap in his trophy collection.

Will Market Secrets Be Shared with All?

Editor:

The Spring 1989 issue of the GEORGIA TECH ALUMNI MAGAZINE carried an article by Lisa Crowe titled "Master of the Market." In essence, the article implied that Professor Fred C. Allvine has unlocked the secrets of the stock market.

I am writing to find out whether that was just a teaser or whether plans are afoot to share the good professor's wisdom with the rest of us—either as a humanitarian gesture to impoverished, retired alumni, or as a grubby, capitalistic money-making endeavor on behalf of the

Institute and/or the professor. In view of all the confusion evidenced among the rest of the world's market gurus, I am anxious to hear your reply.

Klaus Putter, EE '51
Los Angeles

EDITOR'S NOTE: *Dr. Allvine's stock market research receives corporate sponsorship from the Stock Market Research Center, and Dr. Allvine shares his findings with those sponsors. While a book may be in the future, Dr. Allvine is not presently engaged in writing one. He observed, however, that the principles of his forecasting system are being taught in the classroom.*

*Thank you
to the official sponsors of the*

GEORGIA TECH ALUMNI MAGAZINE



- | | | | |
|--------------------------|----------------------------|-------------------------|---------------------------|
| • Acme Business Products | • The Coca-Cola Company | • First Atlanta | • Ritz-Carlton, Buckhead |
| • Ball Stalker | • Delta Air Lines | • Pickett Suite Hotel | • Technology Park/Atlanta |
| • C&S Bank | • Dodson International Air | • Ritz-Carlton, Atlanta | • Wyndham Hotel |

43rd Annual Roll Call Drive



OUR GOAL:
\$4,150,000
G

TECH

EXIT 8
PHOENIX
CLUB
\$10,000-UP

END
OF TAX
YEAR
AHEAD

EXIT 7
ENDOWMENT
CLUB
\$5000-9,999

YELLOW
JACKET
X-ING
CAUTION

NEST
AREA

EXIT 6
TOWER CLUB
\$2500-4999

EXIT 5
THOUSAND
CLUB
\$1000-2499

ONE
WAY
G

EXIT 4
WHITE & GOLD
CLUB
\$500-999

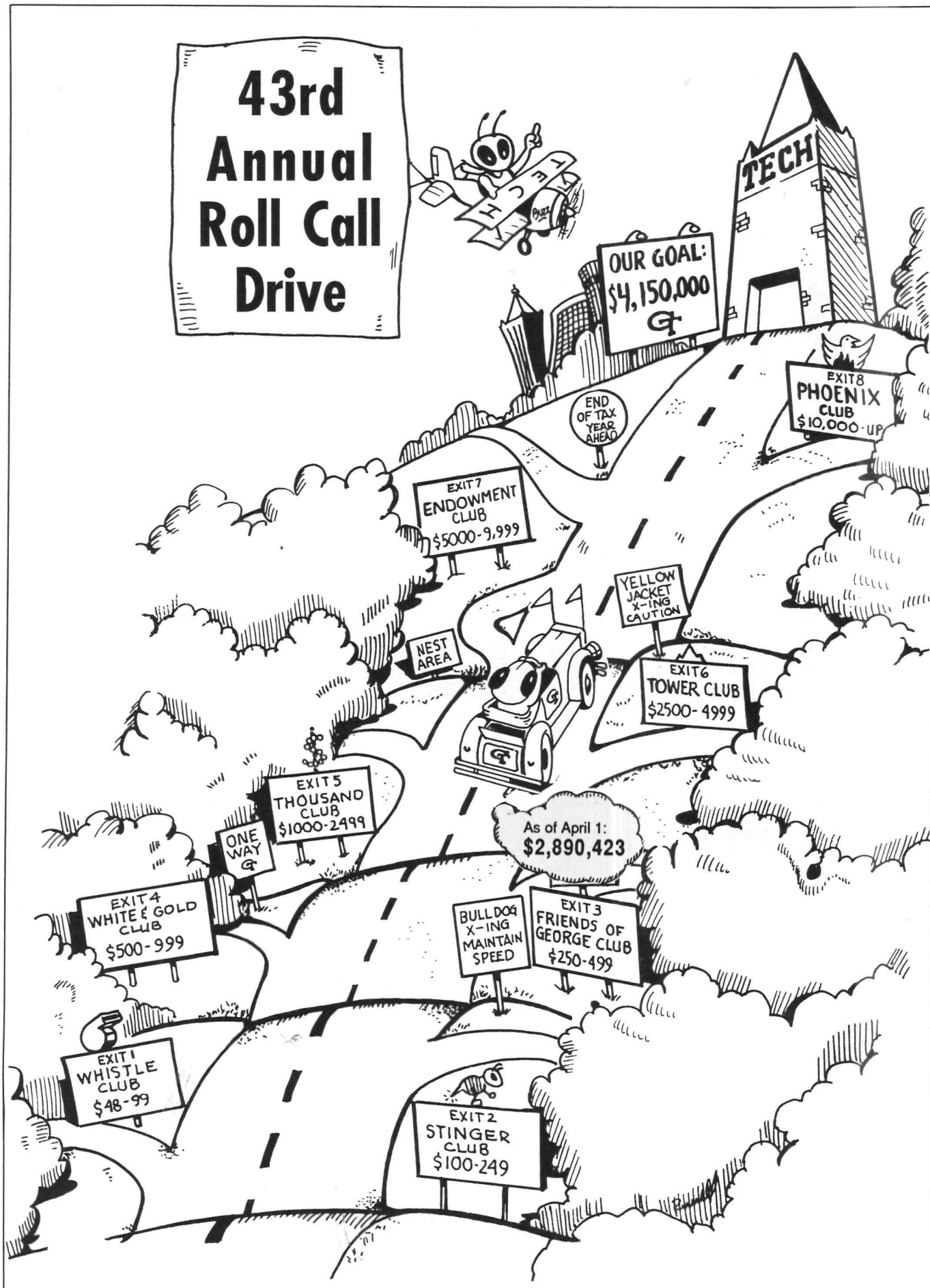
As of April 1:
\$2,890,423

BULLDOG
X-ING
MAINTAIN
SPEED

EXIT 3
FRIENDS OF
GEORGE CLUB
\$250-499

EXIT 1
WHISTLE
CLUB
\$48-99

EXIT 2
STINGER
CLUB
\$100-249



Stelson Resigns Top VP Post

Dr. Thomas E. Stelson, who became Tech's first executive vice president in 1988, has resigned his post effective March 31.

During his 19-year career at Tech, Stelson also served as vice president for research and dean of engineering. Stelson, who has tenure, said he is considering several career options.

Stelson's resignation was announced by President John P. Crecine.

"Given the need for continuity during the establishment of three new colleges at Georgia Tech over the next several months, we decided it would be better for the institution for us to make the change at this time," Crecine said.



Thomas E. Stelson

Crecine consolidated the duties of the vice president for academic affairs and the vice president for research in creating the office of executive vice president, which is the equivalent of chief operating officer.

While on leave of absence from Tech in 1980, Stelson served in the Carter Administration as

assistant secretary for conservation and solar energy in the U.S. Department of Energy, and presided over the \$1.7 billion program during the energy crisis.

Stelson came to Tech as

dean of engineering in 1971 and became the vice president for research in 1974. During his tenure, research expenditures grew from about \$8 million annually to \$120 million in 1988.

Mission Was Secret, Tech's Flag Was Not

Astronaut John H. Casper remembered Georgia Tech when he fulfilled a childhood dream and flew into space as pilot of the shuttle *Atlantis*. On board was a secret military cargo and a not-so-secret Georgia Tech flag.

Casper, an Air Force colonel, attended Tech for a year on academic scholarship in 1961-62, before accepting an appointment

to the Air Force Academy.

At the the conclusion of the shuttle's four-and-a-half day secret military mission, which included the launch of a \$500 million spy satellite, Casper said, "As one of the rookies on board, I just say, 'Wow! What a fantastic experience.'" The mission ended March 4.

Casper, 46, is the third Ramblin' Wreck to venture into space.

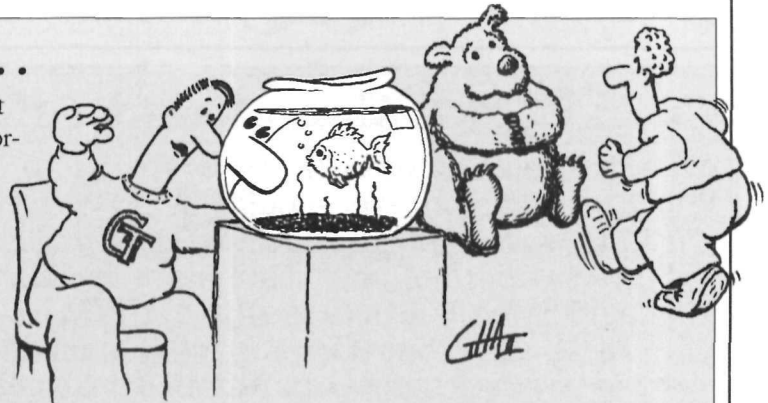
Smile, Students! You're On...

It sounded too good to be true. And, of course, it was. The flyer offered students \$1,000 and the opportunity to sail the Caribbean during spring break. All they had to do was baby-sit the pampered pets that accompanied the wealthy clientele aboard the Queen Caribbean cruise ship.

Alas, it was only a guise for Candid Camera.

Many students called to interview. The chosen six unsuspecting, excited souls showed up at Ajax Placement Center. After a few "normal" questions, the interviewer (Atlanta actress Lee Millman) explained that the job involved caring for and entertaining pets—dogs, cats and goldfish, but also monkeys, pigs, armadillos and even a dancing bear.

The stunt's engineers included Tech's TelePhoto



video crew and student John Hannon, an electrical engineering senior, who produced the video at the request of Alan Funt Productions for CBS television. At press time, a decision as to whether or not the Tech segment will be aired had not been reached.

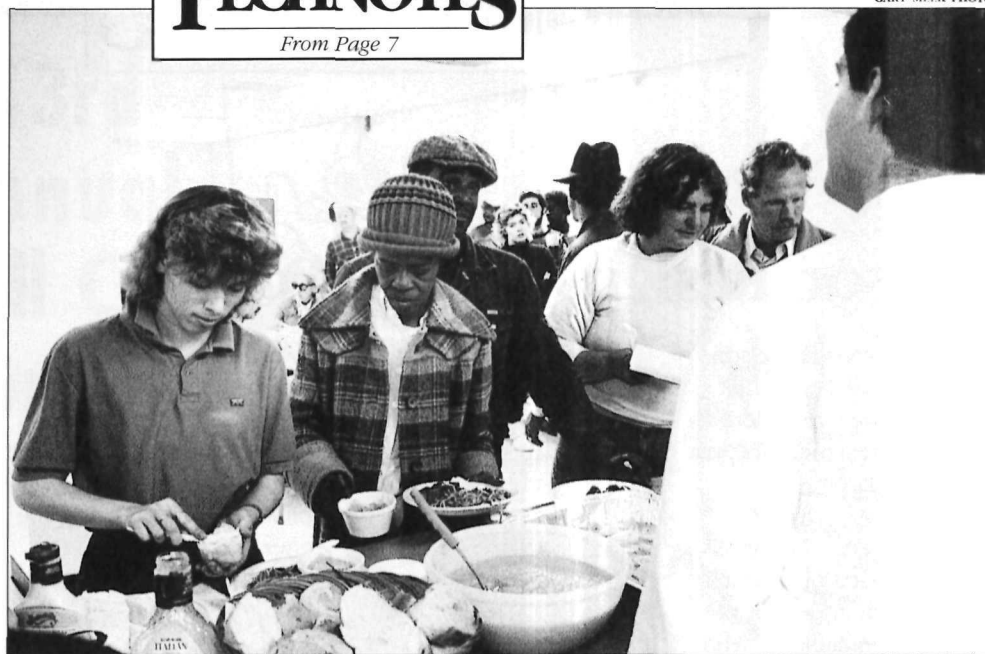
Tech Students Learn Giving from Homeless

Some Georgia Tech students are learning about philanthropy by working with people who have nothing financial to give.

Members of the Georgia Tech Student Foundation have volunteered their time to work at Temple Zaban Shelter in downtown Atlanta, a facility for homeless couples.

"One of the foundation objectives is to instill in Georgia Tech students a greater understanding of philanthropy," said Keith Mendel, a co-op student and trustee of the student organization.

The students, working an evening shift or an overnight shift, have given more than 100 hours of service to the shelter, which is open from Nov. 1 to March 31 and accom-



Among Tech students' tasks at Temple Zaban Shelter is helping serve meals.

modates 23 couples. Mendel said 21 Tech students have worked at the shelter.

"The shelter offers its residents job counseling and the services of a social

worker," Mendel said. The shelter has a live-in resident and is supported by seven metro Atlanta Jewish congregations.

"The most rewarding

part of the evening is when the students actually go out and have dinner with the guests, talk with them and hear some of their stories," Mendel said.

Capital Matchmaker Opens at ATDC

Entrepreneurs needing capital and investors looking for investment opportunities now have an opportunity to meet through the new Georgia

Capital Network. Operated by the Advanced Technology Development Center on the Georgia Tech campus, the computer-based system will list as

many as 300 entrepreneurs and investors, according to network officials. Fees and other information is available by calling 894-5344.

Technotes continued page 11

Georgia Tech Alumni Association

Officers

Oliver H. Sale Jr. '56
president

B. Joe Anderson '50
past president

Shirley C. Mewborn '56
president-elect/treasurer

John C. Staton Jr. '60
vice president-activities

H. Hammond Stith Jr. '58
vice president-communications

G. William Knight '62 '68
vice president-Roll Call

John B. Carter Jr. '69
vice president/executive director

James M. Langley
vice president

Trustees

Thomas A. Barrow Jr. '48

James D. Blitch III '53

Hugh A. Carter Jr. '64

Stanley L. Daniels '60

H. Guy Darnell Jr. '65

Joseph T. Dyer '69

H. Allen Ecker '57 '58

Edwin C. Eckles '52

Jack J. Faussemagne '65

Hal W. Field '51

Frank B. Fortson '71

Samuel O. Franklin III '65

Thomas B. Gurley '59

P. Owen Herrin Jr. '70

Brian D. Hogg '61

James R. Jolly '64

G. Paul Jones Jr. '52

James R. Lientz Jr. '65

Frank H. Maier Jr. '60

Ronald L. Martin '68

Robert E. Mason '60

Patrise M. Perkins-Hooker '80

James Richard Roberts III '69

L. Gordon Sawyer Sr. '46

V. Hawley Smith Jr. '68

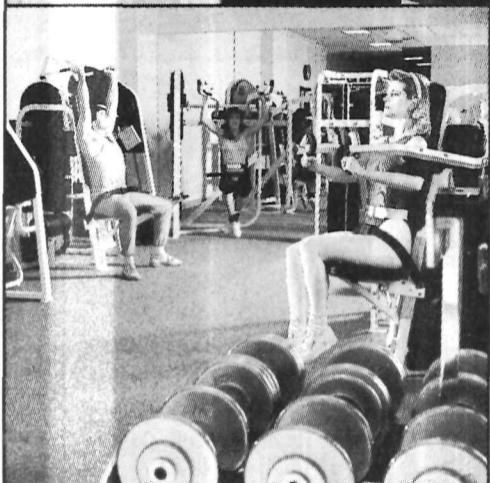
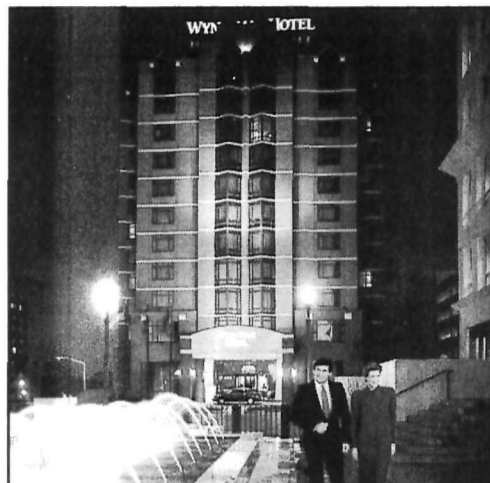
W. Clayton Sparrow Jr. '68

Francis M. Spears '73 '80

George A. Stewart '69

H. Milton Stewart Jr. '61

S. Joseph Ward '51



COME BACK TO SCHOOL FOR A SONG. \$55

Yellow Jackets get special savings at the Wyndham Midtown Atlanta. For just \$55 on weekends and \$72 weekdays* you can relive those college days. Only blocks from campus, we offer luxuriously appointed guest rooms and superb service. Popular dining and entertainment. And the state-of-the-art Midtown Athletic Club. Call now for reservations at (404) 873-4800 or 800 822-4200. As Ramblin' Wrecks from Georgia Tech you get a helluva Wyndham deal!

*Rates are per room, per night, based on availability.

WYNDHAM MIDTOWN ATLANTA

A TRAMMELL CROW HOTEL

Official sponsor of The Georgia Tech Alumni Association.

Peachtree & 10th Streets, N.E., Atlanta, GA 30309 (404) 873-4800
U.S. 800 822-4200 CANADA 800 631-4200



OFFICIAL SPONSOR
ALUMNI MAGAZINE



OFFICIAL SPONSOR
ALUMNI MAGAZINE

Charter Your Next Flight With Dodson. It'll Be Time Well Spent.

Business data is transmitted in nanoseconds. But multi-million dollar corporate producers are made to wait idle in an airport, waiting for a connection. You can't afford to waste any of the valuable time of these valuable people.

Dodson International Air offers custom-tailored arrivals and departures and flies to any destination, large or small. We service those airports too small for major airlines, thus eliminating time wasted on ground transportation. Charter their flight *direct* on DIA.

Our interiors are designed to allow in-flight conference meetings (including phones and catering), further utilizing flight time.

Dodson International Air offers cargo transportation, private fleet management and staffing services as well as business charter.

Take a minute to call us. It'll be time well spent.



DODSON
INTERNATIONAL AIR
10075 Kinross Road, Roswell, Georgia 30076
(404) 475-8822

Distinguished Engineer To Open Lecture Series

Donald E. Petersen, an engineer who became the head of Ford Motor Co., will speak at Georgia Tech in April.

Petersen became president and chief executive officer of Ford in 1981, and chairman and CEO in 1985. He is the inaugural speaker for the George W. Woodruff School of Mechanical Engineering Distinguished Lecture series. He will speak at 3:30 p.m., April 26, in the Electrical Engi-

neering Auditorium.

Petersen's career at Ford began in 1949. He played a substantial role in developing such cars as the Ford LTD and the Mustang. His 40 years span the American auto industry's Goliath days and its recent humbling encounters with Japanese competitors. He retired March 1, 1990.

In 1988, Petersen was elected to the National Academy of Engineering and cited for his "outstand-

ing leadership in the development of high-quality, smaller, lighter, more fuel-efficient, and more socially acceptable automobiles."

He has also been named the American Manager of the Year by the National Management Association, and Chief Executive of the Year by *Chief Executive* magazine.

For additional information, call the School of Mechanical Engineering at (404) 894-3200.



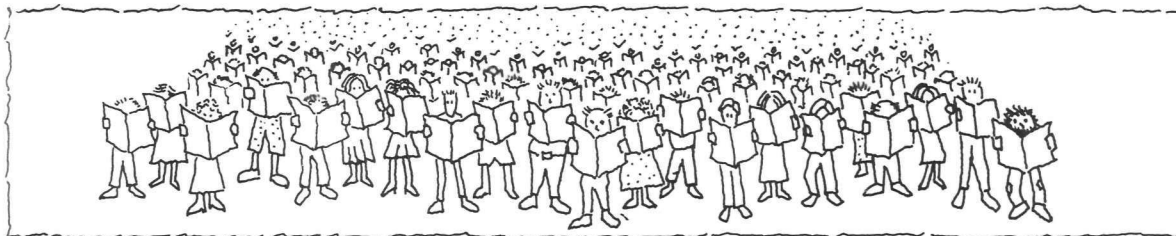
222-TECH

SPONSORED BY
GEORGIA TECH ALUMNI ASSOCIATION
THE COMMITTEE OF TWENTY
A Service Provided by 222-2000

To find out what's happening at Georgia Tech, call the 24-hour Buzz Hotline.

Technotes continued page 12

Let 26,000 Georgia Tech Alumni and Friends Know Your Business.



Whether your business is a service or a product, the Georgia Tech Alumni Magazine can help you get the word out. The Georgia Tech Alumni Magazine is received quarterly by thousands of people interested in knowing about your business. With the wide

variety of our readers, wonderful things can happen by placing an advertisement with us.

For more information on letting us promote your business, please call Wayne Parker at (404) 894-2391.

Students Take Over Tech, But That's Their Problem

Georgia Tech students took over key administrative offices on campus in March, but, hey, it was business-as-usual. In fact, some of Tech's highest ranking administrators seemed glad to introduce the students to some of the headaches they face on a day-to-day basis.

To anyone familiar with the turbulent '60s, the idea of students taking over administrative posts might conjure up a nightmarish scene. But this year's student takeover was, well, the president's idea.

President John P. Creane, who last year traded places with a student for a day, decided it would be good for students to see, first hand, just what goes into the operation of a major university.

Members of the Georgia Tech Student Foundation agreed, and for a day, the students ran the offices of some of Tech's key

administrators. For their part, the administrators seemed content to relinquish their problems. Ten administrative officers participated in the exchange.

Students were given some insight into the operations of the Institute, faced a few challenging



Student Vicki Adams "took over" the office of James Langley, vice president for External Affairs.

decisions and were taken to lunch by the administrative officers.

The transition of power was not lost on some of Tech's student assistants. As Tish Knight related, they quickly got on her agenda to hit her for a raise.

At 100, Wyckoff Thanks Lucky Genes

Professor emeritus Hugh A. Wyckoff doesn't make it to see "toe-meet-leather" at Bobby Dodd Stadium or join the throng at the Thrilledome, but he doesn't miss a game on television.

"I don't get around much anymore," says Wyckoff, who turned 100 on Jan. 10. "I don't walk well enough now. But I watch 'em on TV."

Wyckoff, who joined the Tech faculty in 1926 as the biology department, retired at age 67 as head of the Public Health and



Biology Department in 1957 after a 31-year career. During that time the department expanded to include biology, bacteriology, human physiology, sanitation and industrial hygiene.

Wyckoff's enthusiasm for sports parallels his academic career. He was a member of Tech's Athletic Association board for 20 years, serving as secretary and treasurer for 10 years.

After retiring from Tech, Wyckoff began a second career as consultant for the Cobb County-Marietta Water Authority, where he worked for 19 years before retiring at age 90.

"I am rather proud of my work for the water authority," Wyckoff says. "I didn't have anything to build on when I started. Now it's as good a water supply system as any in the country."

Wyckoff has witnessed the evolution of modern technology in his lifetime. He remembers the introduction of the automobile and he was a teenager when the Wright brothers made their famous flight. Last year he decided not to drive anymore, although his license is still valid, and sold his car. His children help him get around when he needs transportation.

"My wife died in 1984, and I'm living here by myself rattlin' around in an eight-room house, but I like it," Wyckoff says matter-of-factly.

To what does he attribute his long life?

Wyckoff chuckles softly. "Genes." ■

Doggone Problems

The untimely demise of the University of Georgia mascot on Feb. 26 did not escape the attention of the *Technique* staff, which published the "Top ten problems caused by the death of UGA IV."

From the list:

- The UGA student body cannot count to V.
- Alumni must teach UGA V how to bark.
- Must find new commencement speaker.
- Must find new tutor for the football team.

Putting
People
First
Makes
First Atlanta
Second
To None.

FIRSTATLANTA
Second to None



OFFICIAL SPONSOR
ALUMNI MAGAZINE

A Conversation With SAM NUNN

Samuel Augustus Nunn, Cls '60, has represented Georgia in the U.S. Senate since 1972. The Perry, Ga., native is widely regarded as the leading voice of the Democratic Party's moderate-conservative wing, and has often been mentioned as a possible presidential or vice presidential candidate.

As chairman of the powerful Senate Armed Services Committee since 1987, Nunn has been involved in many high-profile issues in the areas of arms control, new weapons systems and Pentagon procurement practices.

Widely respected for his expertise in military issues, Nunn has strongly supported a land-based anti-missile system as an alternative to the so-called "Star Wars" plan. He advocates a greater role for Western Europe in its own defense, and favors American emphasis on air power rather than costly ground forces to protect its interests overseas. In that connection, he supports deployment of the Stealth bomber.

Nunn also chairs the Senate Subcommittee on Investigations and serves on the Governmental Affairs Committee and the Select Committee on Intelligence. He is also a member of several subcommittees: Government Information and Regulation; Small Business; Urban and Minority-Owned Business Development; and Rural Economy and Family Farming.

He entered Tech as a freshman in 1956, but transferred to Emory University the next year. He received his undergraduate degree from Emory in 1960 and a law degree, also from Emory, in 1962.

Nunn's career in elective politics began in 1968, when he was elected to the Georgia House of Delegates from Houston County. Four years later, Nunn upset the incumbent and won election to the U.S. Senate.

So many current events touch upon your responsibilities in Congress that you must be one of the busiest people in Washington.

Management of time is the hardest part of my job. You have to set priorities. The overriding priority is what is happening in Georgia. Washington priorities are one thing, but Georgia priorities take precedence over that. The Armed Services Committee chairmanship is a top priority, and second is my chairmanship of the subcommittee on Investigations.

There are a lot of days that I don't get through until 7 or 8 o'clock at night. When I look back on the events that took place that day, it seems they should have taken about a week, there's just so much crammed in.

You are widely considered to be the expert in Congress on defense matters. Does that reflect a personal interest, or because defense industries are so important to the state of Georgia?

I would say there are four reasons. When I got out of law school in 1962, I worked for Carl Vinson in Washington, who was then chairman of the House Armed Services Committee. I worked in the defense area, on the subcommittee on procurement.

The second factor would be the interest I had in defense as a resident of Houston County. We have a big Air Force base in Warner Robins and the Air Force has a large bearing on the economy in the area. I was on the Air Force Association Citizen Advisory Council and I also headed up the Perry Chamber of Commerce.

A third reason is the heritage. Carl Vinson and Richard Russell had both been very active on the armed services committee. Russell had been chairman and Vinson had been chairman.

The fourth reason would be a general interest in Georgia about the military. But it goes beyond its economic impact—Georgia has been one of the top military recruiting states for years. The South in general is more interested in military affairs than are other parts of the country.

Continued page 16



A Conversation with Sam Nunn

Reagan is earning \$2 million speaking in Japan while Carter is working to reduce hunger and poverty in Africa.

Have you always had an interest in politics?

I grew up with politics. Before I was born, my father had been in the Georgia legislature and on the state board of education. We talked about those things later. My father was also campaign manager in one governor's race back in the '20s. My great uncle was Carl Vinson. Growing up, I remember sometimes I would sit around and talk to him for as long as he had the patience.

When I went to Washington in 1962 and had that exposure working as the counsel on the procurement subcommittee, that was the first time I really got politics in my blood. I knew at that point that I wanted to go into some kind of legislative race and, hopefully, serve in the Congress—that was my ambition.

Would you say that being a senator from Georgia is the realization of your political ambitions?

Being in the Senate has been a great experience for me. I can't think of anything I'd rather do in terms of elective office. I can't think of anything in politics I'd rather do than be a senator.

When 1992 rolls around there will certainly be speculation about "Nunn for President." What do you think of that kind of talk?

Well, I'm flattered by it, but I know that as soon as the first serious article comes out about that possibility, our friends on the left in the Democratic Party will start their inevitable assault. The first flattering article will bring a great number of others that are critical. So it's a mixed bag. You always are gratified and complimented when somebody says that you should be running for president, but it has not been a life-long ambition of mine. At this stage, I'm doing what I really want to do.

Do you find it difficult being a Democrat these days? In terms of presidential politics at least, the party has seemed bent on self-destruction over the past couple of decades.

I have enjoyed being in the Democratic Party. If you look at the whole realm of history, most of the lasting achievements both in foreign policy and domestic policy have come in Democratic administrations.

I am uncomfortable with the post-Vietnam War Democratic National Party and its liberal image. Part of

that image is reality, part of it is unfair criticism.

How does the Carter Administration fit into that post-war image?

I believe that Carter was somewhat of an aberration. By that, I mean he was much more moderate than the national party. In fact, Ted Kennedy ran against him for being *too* moderate. Carter is not what I would call a hard-right conservative; he is in the middle of the political spectrum.

He ran into some unfortunate circumstances when he was president. If Carter had had the support of the left wing of the Democratic Party, and if he had gotten a couple of breaks—for instance, if the Iranian hostage rescue mission had been even partially successful—he would have been re-elected to a second term.

Also, the Washington media tried to make the Carter people look like a bunch of yokums.

A number of people say the media is dominated by a liberal point of view.

I wouldn't say that. I think there is an enormous amount of conservative opinion in the media, and an enormous amount of liberal opinion.

Carter received a lot of bad press, if compared to his successor.

I think there has been a bias against Southern politicians in the national media for some time. I haven't felt that personally. I do not in any way think I have been treated unfairly. But the national media has a historic viewpoint that Southerners belong in the legislative body. They don't mind saying good things about them as long as they are in the legislative body, but if they start being presidential candidates, some stereotyping comes out.

Jimmy Carter was anything but a stereotypical Southerner, but some of the national media tried to portray him as that. And, frankly, some of the people around him in his first year or two in office lent themselves to that kind of description. But anybody who knows Jimmy Carter knows that he is far from anything like a man of bias or prejudice, or is in any way narrowminded.

I think Carter's record will look better as time goes on. Reagan is making \$2 million speaking fees in Japan while Jimmy Carter is working to get rid of the Guinea

Continued page 18



A Conversation with Sam Nunn

More than anything else, the knowledge explosion has changed the communist world

worm in Africa—that's making Carter look a lot better in people's eyes.

Did the Reagan Administration get more favorable press than it deserved?

I don't need to get into that. I believe that as time goes by, it'll be put into a more appropriate perspective.

Reagan did some good things. He made some correct moves in foreign and domestic policy. But he also had some excesses. He did not stop the pendulum in the middle; very seldom did he move from something too far left to an appropriate spot in the middle. He swung it too far in American fiscal policy and trade policy, and encouraged a short-term view of the world—sort of an immediate-gratification governmental mode. We are paying the price for that now in our international economic position. We'll pay an even greater price in years to come. It's got to be turned around. A lot of things that Reagan did have got to be reversed.

Do you sense that things are changing?

Somewhat. I think Bush is a little different. He saw how well that "gratification *now*" approach worked for his predecessor. You can't criticize it as a political formula, but as a governing philosophy, I think it falls short. But the major part of the reversal is yet to come. As a nation—in business, in government and individually—we are going to have to think much longer-term than we have.

Speaking of change, the events taking place in the Soviet Union and Eastern Europe seem almost too good to be true. What is your view?

Let me put it this way: If we've got a choice between taking it the way it's happening now or leaving it the way it was, I would not hesitate a moment in saying "Let's take it the way it's happening." If I could list the ways I would *prefer* it to happen, I would go somewhat slower in the process. When things move this quickly it's very hard to stop that pendulum in the middle. When you start moving it to the far left, expectations begin to exceed reality. I think that's particularly true in terms of economic expectations.

About a year from now, if there are not very significant improvements in the economies of Eastern

Europe, those countries will lend themselves to a lot of demagoguery-type leadership—ethnic demagoguery, nationalistic demagoguery—what I would call "right wing" demagoguery.

Can the United States handle more players in the international marketplace? We're having enough trouble with the existing competition.

That's right. We're living off our foundation from the past. We came out of World War II with almost no competition militarily, economically, politically, socially and just about every other way. But that's changed. Now our margin for error in all these fields is greatly diminished. We're going to have to quit living off the corpus and start producing for this generation and for the future.

I think the thing that has changed in the communist world more than anything else—or that has *changed* the communist world—is that we are in an age of knowledge and technology and information. Those communist countries cannot afford to compete in a world of computers without having some basic freedoms, so they're having to accord those freedoms to their people in order to compete in the world.

The challenge to us is to do much better in terms of our educational system, human capital, productivity, savings and so forth.

The advent of a more technologically-driven world should certainly increase the stock of schools such as Georgia Tech, but will that be enough to ensure our economic competitiveness in the world?

Our schools of technology and engineering are going to be in more and more demand, no doubt about it. But the math and science stimulation of our young people has to start in the early grades of school. We've got to do something in the 7th and 8th grades to get those kids to take enough math and science so that when they finally decide they want to go into engineering, they're prepared to do so.

A lot of our inner-city kids and rural kids don't have enough math and science background. By the time they get into 11th or 12th grade and decide they want to go to engineering school, they've already defaulted. We've got to turn that around at the lower school level before we're going to see it reflected at the higher level. ■

A DEGREE
FROM TECH CAN OPEN
A LOT OF DOORS.

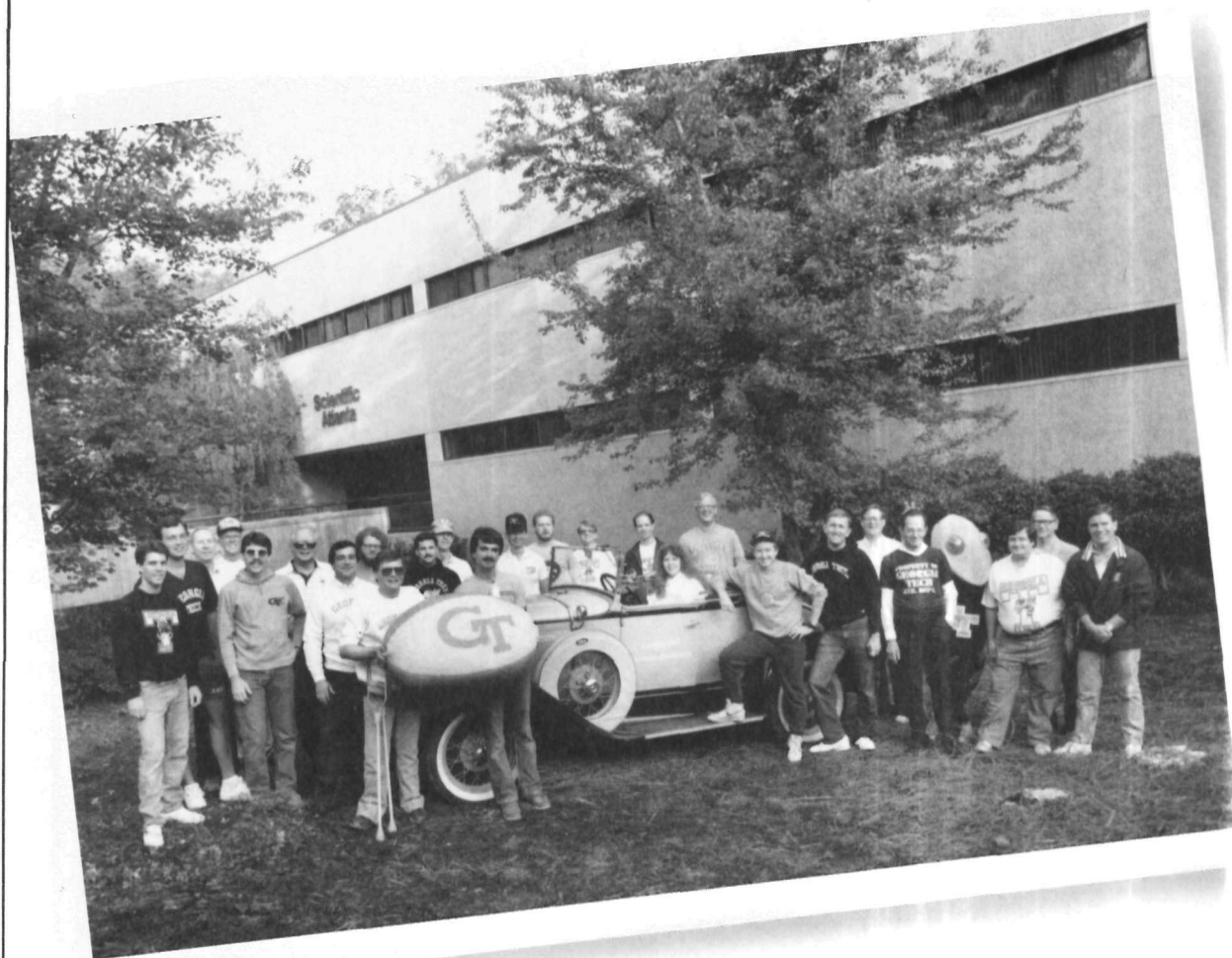


THE RITZ

The Ritz-Carlton, Atlanta is offering a special rate for Yellow Jacket fans. Just \$100 per room per night, subject to availability. Join us at Peachtree and Ellis Streets for the city's finest accommodations. Luxurious rooms. Gourmet dining. An elegant bar. Impeccable service. And an obsession for detail that shows in everything here. From fine art to fresh cut flowers throughout the hotel. For reservations, please call 404-659-0400 or 800-241-3333. Our doors are wide open for you.



THE RITZ-CARLTON
ATLANTA



A CLASS BY OURSELVES.

You'd be surprised how many tech grads you meet at Scientific-Atlanta.

Which we think says all that needs to be said about the quality of our people. And the quality of our technology.

If you're interested in creating communications systems and equipment that redefine the limits of possibility, talk to us. We think you'll find we're a class act.

To learn more about Scientific-Atlanta's career opportunities, send your resume to: SCIENTIFIC-ATLANTA, Central Employment, P.O. Box 105027, Dept. TT, Atlanta, GA 30348.

An Equal Opportunity Employer.

Scientific Atlanta



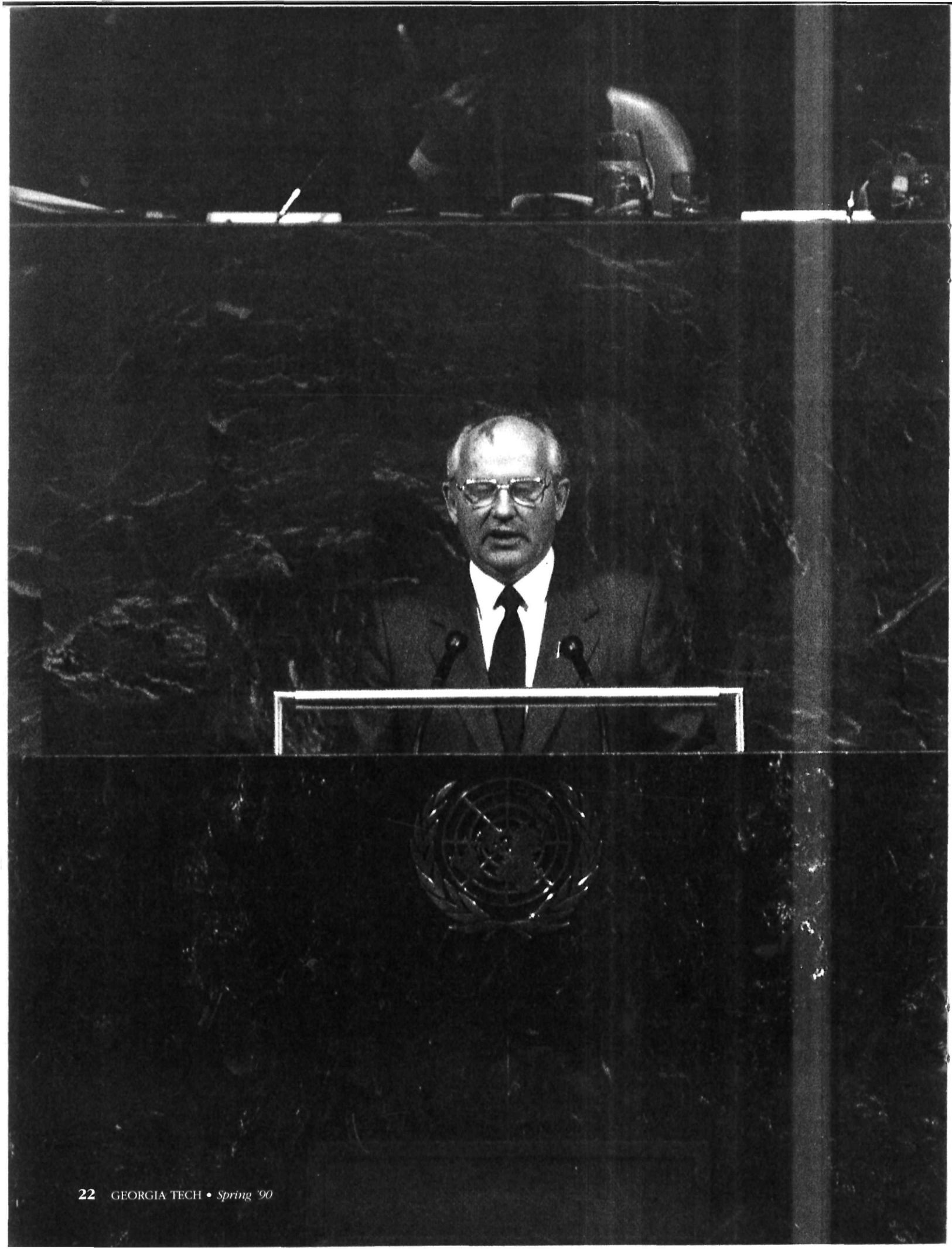
OFFICIAL SPONSOR
ALUMNI MAGAZINE

Written by John Dunn

Hundreds of thousands of Russians demonstrate in Moscow's Red Square as the Communist world crumbles to demands for democracy. Tech's Daniel Papp, an authority on international affairs, analyzes

Gorbachev's Revolution

WIDE WORLD PHOTOS



Gorbachev came to power realizing the Soviet Union faced a grim future. His remedies are changing the world.

As a skeptical, awestruck world watches, an unlikely revolution sweeps across the face of Eastern Europe and into the heartland of the Soviet Union. Tyrants, confounded and confused, relinquish power and ideology into the hands of a euphoric people rallying to demand democracy and freedom.

At the center of the turmoil stands Soviet General Secretary Mikhail Gorbachev. This is his moment in history, perhaps to be remembered as the man who saved the Soviet Union from itself.

What does all this mean and what in the world is going on?

Dr. Daniel S. Papp, a highly respected observer of international affairs and the director of Georgia Tech's School of Social Sciences, thumbs a photocopy of a published article he wrote as the decade of the 1980s was being ushered in. What he saw almost 10 years ago from the Soviet Union's point of view was a very grim future.

"From Moscow's perspective, the old fears may be coming true—encirclement, dependency, national fragmentation, ideological irrelevance and economic stagnation," Papp wrote in 1981.

"How would any leader react to the realization that the nightmares of his predecessors were becoming the realities of his own rule?" the article asked. "How would a Soviet leader, or a member of a collective leadership, react to the realization that his country's new capabilities, so carefully nurtured in the face of overwhelming odds for two-thirds of a century, were in fact growing less influential as the years passed? Would he lash out in frustration to attempt to set right the course of history, or would he accommodate his ideology and ambitions to the new realities?"

The answers to those questions as provided by Mikhail Gorbachev have dazzled and amazed the world. *Time* magazine called it "the Gorbachev revolution" and named Gorbachev its "Man of the Decade."

Gorbachev has begun unraveling the Communist empire of Lenin, Stalin, Khrushchev and Brezhnev and

In recent speeches—such as this one before the United Nations—Gorbachev has urged reductions in military spending. He has pulled Soviet troops out of Afghanistan and cut levels in Eastern Europe.

brought the Soviet Union to the brink of democracy.

It is a revolution that is occurring with surprising speed, announced in startled headlines and newscasts. A sign in Prague, Czechoslovakia, focused on the swiftness of change from Communist to non-communist power in Eastern Europe:

Poland—10 years.

Hungary—10 months.

East Germany—10 weeks.

Czechoslovakia—10 days.

Romania—10 hours.

"I personally thought it would happen in Eastern Europe as soon as the Soviets declared they would not intervene anymore," says Papp. "I never thought that it would happen in the Soviet Union itself in my lifetime."

A voracious reader, Papp is the author of numerous books on the Soviet Union and international affairs. Books are crammed in the bookcases that bank three of the walls in his office. Their titles—*The State of the World*, *A Soviet Lexicon*, *The Foreign Policies of the Powers*, *West German Politics*, *United States-Soviet Relations*—though relevant, seem suddenly outdated. Papp is currently revising a new edition of one of his books, and he wonders if his revisions can keep pace with the changes in a world of upheaval.

And why, after indoctrinating generations of children with the Marxist ideology, did the Soviet Union clearly fail to produce "a new Communist man?"

Papp lists reasons: "because the economics weren't working, because the politics of centralization was intellectually stultifying, because the Soviets never solved the nationalities problem, because they overemphasized their military. You put all that together and that is why the 'new Communist man' was never created."

Papp's gestures punctuate his analysis of what is happening.

"During the early and middle 1980s, anyone who really took some time and did some hard-headed analysis of what the trends were in the Soviet Union could see that the U.S.S.R. was going to face serious economic, population, ideological and other problems during the 1990s and on into the 21st century. Some people in the Soviet Union were doing the same sorts of analysis, and one of those was Mikhail Gorbachev.

"When Gorbachev came to power in 1985, even before he became general secretary, I believe he had

Continued next page

"Whether Gorbachev succeeds or fails is going to depend fundamentally on what happens in the Soviet Union; it is not going to depend on the U.S."

already reached the conclusion that things had to change and change drastically in his country. Otherwise, the country was going to wind up being on Leon Trotsky's proverbial trash heap of history.

"As a result of Gorbachev's conclusion that a variety of different parameters pointed downhill for the Soviet Union, he began his revolution—the Gorbachev revolution." Papp outlines its four distinct elements:

- *Glasnost* (openness)—addressing the social and cultural area.
- *Perestroika* (restructuring)—addressing economics.
- *Demokratizatsiya* (democratization)—addressing politics.
- *Novaya myshleniya* (new thinking)—addressing foreign policy.

Through *glasnost*, Gorbachev initiated a strategy that allowed Soviet citizens to criticize, question and challenge its leadership. This in turn allowed Gorbachev to "tighten the screws on the people whom he knew would oppose even more significant economic and political reforms that he wanted to undertake," Papp states.

"*Glasnost* was both an objective and a tool," Papp explains. "It was part of Gorbachev's strategy to initiate a revolution from below and from the very top, in an effort to put a squeeze on the people in the middle, the ingrained *nomenklatura* (party elite) and *apparatchiks* (party officials)."

The second part of Gorbachev's strategy was to encourage decentralization and private initiative in the economic sector. He did this with *perestroika*, his program of cooperatives, management reform, and economic accountability. But so far, Papp observes, the economic plan has not been successful.

The third stage of Gorbachev's strategy has been to introduce *demokratizatsiya*, political democracy. Instead of rewarding members of the party for how well they have played the party game, Gorbachev gave the Soviet people the most democratic election they have had since the fall of 1917. Many members of the party's old guard suffered ignominious defeat.

"Gorbachev has defied everybody by proving the politics of relative moderation work in the Soviet Union," Papp says. "He has succeeded in balancing, at least to this point, the two extreme wings of the Soviet body

politic. There is the extreme right-wing that views any change as being too extreme. There is the extreme left, led by Boris Yeltsin, which views any change as being too slow.

"Gorbachev has succeeded in putting himself in the middle so that he can continually ask: 'If not my programs, whose? If not me, who?' And the people continue to say, 'Hey, it's got to be you.'"

"How long he can maintain this balancing act is anybody's guess. At some point he has got to begin producing results. The Soviet people, as long-suffering as they are, are going to ask, 'Where's the beef?'" Papp says.

Should the U.S. do more to help Gorbachev succeed?

"We should absolutely build bridges to them, to try to help them prosper," Papp says. "The questions are: How do you do it and how rapidly do you do it?"

"We should proceed with caution. We don't know who is going to be running the U.S.S.R. the day after tomorrow. We don't know what that person's attitude is going to be towards the United States and towards the West. We have to do everything in our power to make sure that Gorbachev or individuals who think like him can institutionalize all the things that they want to institutionalize. But I don't believe we are yet at a stage where this is irreversible. I also believe that what we can do will impact events in the Soviet Union, at best, on the margins.

"Whether Gorbachev succeeds or fails is going to depend fundamentally on what happens in the Soviet Union; it is not going to depend fundamentally on U.S. policies unless we do something incredibly stupid, which we haven't done."

The U.S. should take a leading role in working with the Soviet Union on an equal and verifiable reduction of arms to achieve the so-called peace dividend, Papp says.

"Such an approach will provide at first only a few billion dollars here and a few billion dollars there, but over a longer time, assuming things continue to go favorably, it could provide savings of a hundred billion dollars a year or more.

Continued page 26

Cheering the prospect of a demolished Berlin Wall—communism's most visible symbol of oppression—demonstrators envision a reunified Germany. Gorbachev's liberalization policies have led to dramatic, unbelievable changes in Eastern Europe.



**"If Gorbachev's revolution is successful,
the Soviet Union will become a democratic government,
headed by a democratically elected president."**

"For example, I personally have no problem with getting rid of one or more entire aircraft carrier battle groups, the 'stealth' bomber (but not the technology), and eventually one or more Army divisions, and putting all of the savings into foreign aid, domestic programs or deficit reduction. In the world that appears to be emerging, this might be a much more effective way to achieve our foreign and domestic objectives.

"But, having said that, too rapid a demobilization of military capabilities, in the absence of comparable demobilization in the Soviet Union, can be more dangerous and destabilizing than what we're currently doing. I believe the Soviets intend to reduce their military capabilities, but they are only just beginning to do that now."

How should the Western World approach Eastern Europe? "On the official government level, we have to pursue a policy toward Eastern Europe almost exactly as we are," Papp says. "We have to recognize that we must provide some type of economic assistance to Eastern Europe. But given our own economic difficulties, and given the fact that Eastern Europe is a third of the world away, we are not the primary economic actors in Eastern Europe. Our Western European allies probably are.

"It's also very necessary for Americans as individuals to do just what many Americans are doing—going to Eastern Europe, providing education and assistance, looking for business contacts and organizing private initiatives among community groups. People-to-people diplomacy is a critical strength that we in the United States have."

There is a danger. What happens if the democratic leadership in those European countries that have turned out their Communist governments cannot meet the high expectations of the populace, and the people themselves become frustrated?

"They may be willing to go to a strongly nationalistic, centralized authority that promises them good things and can deliver some good things on the basis of exploiting other segments of the population," Papp states.

"We saw that happen in Europe at least once before, during the 1930s, and there is that danger," he observes. "Over the course of the past year or so, we have witnessed the *fun* part. Recent events in Eastern Europe

have been uplifting—the emergence of independence, freedom and democracy.

"Now comes the hard part—creating a government and economic system that improves the standard of living and quality of life for wide segments—for preferably all segments—of the population. That is the challenge. Can it be done this next year, the next two or three years? The near future will be an absolutely critical time."

Western Europe is also rallying to help Eastern Europe, Papp says, citing the establishment of the Eastern European Development Bank, created under the initiative of France, and capitalized "to the tune of billions of dollars." The bank extends grants to East European entrepreneurs to help them establish a capitalist system. The French and German governments have both extended loans and the Japanese government has promised up to \$2 billion.

"The challenge facing Eastern Europe and the Soviet Union is how to move from a highly centralized system to an essentially free-market economy without simultaneously causing immense dissatisfaction, disruption and decline in living standards. Nobody has done it before.

"I wouldn't be too surprised if many of the Eastern European societies do not look at the United States as a model for economic and social development and instead look toward the Scandinavian countries, where you can have private ownership as a means of production, where there is an emphasis on individual initiatives, but at the same time there is a tremendous emphasis on providing for all parts of the population—a safety net for housing, education, health and welfare and old-age benefits."

If Gorbachev's revolution is successful, Papp says, the Soviet Union will become a democratic government, headed by a democratically elected president.

"It might not be the same sort of democracy that we have here," Papp adds. "Again, the Scandinavian political and economic democracy may well be a better model from a Soviet perspective."

If the Soviet Union is transformed into a democracy, Papp says, history will reflect on Mikhail Gorbachev as "that man of brilliance and vision" who encouraged it to happen. ■

**Waving a flag with its communist symbol torn out,
demonstrators celebrate the Romanian uprising.**



A Student Views The Wolf in Romania

Teodor Vulcan, a Romanian political refugee and presidential fellow working on his doctorate at Georgia Tech, followed events in Romania with a sense of excitement and pride as a democratic revolution toppled the despotic regime of Nicolae Ceausescu.

"At the very moment that I saw the fight and the people who didn't care about guns and death, who just wanted to be free, I was proud that I was a Romanian," says Vulcan. "I spent many hours trying to find out more—watching TV and talking with friends around the country, and trying to call my friends over there."

Since the week of revolution that led to the execution of Ceausescu and his wife, Elena, on Dec. 25, 1989, Vulcan's enthusiasm has been tempered by letters from his homeland. "There is a saying that the wolf changes his fur, but not his nature," says Vulcan, whose family had suffered from the communist regime's oppression.

"The new government said the Communist Party is compromised, that it doesn't exist anymore in Romania," Vulcan continues. "But the president, Ion Iliescu, used to be a close friend of Ceausescu, and he just replaced him."

"An opening has been made, without a doubt, but they didn't dismember the *Securitate* [secret police]. Those who killed so many people have not been punished. They still have their jobs; they still are paid."

Vulcan speaks with fervor and his eyes become intense as he refers to letters from friends and other contacts he has maintained.

"Already three of the leaders of the opposition party in one city have been murdered. They try to intimidate the young people who want to join this party. The same government that calls itself the Front of the National Salvation is called by the people the Front for the Salvation of Communism."

Vulcan received his undergraduate degree in physics from the University of Bucharest. Despite good grades and recommendations from the faculty, he was denied the opportunity to obtain an advanced degree.

"Each person in a totalitarian system has a secret police file," Vulcan explains. "My file said I was the son of a very dangerous man, although my father was dead."

Vulcan's family had ties with the democratic government that existed before World War II. His father was arrested after the Communist took power in 1947. "They tried to find something to charge him with, but they

couldn't. They kept him about three years. He was young at the time and he resisted very well."

Vulcan's father, a professor of mathematics, left his hometown and went to Chitid, a small village in the Carpathian mountains, where he became director of a school. When Romania began its collective program, telling farmers to give their property to state-run collectives, there was resistance. "My father was regarded as the leader of this revolt; he was arrested," Vulcan says. "They tortured him. He stayed in prison for almost three years. When he came out, he was an old and sick man."

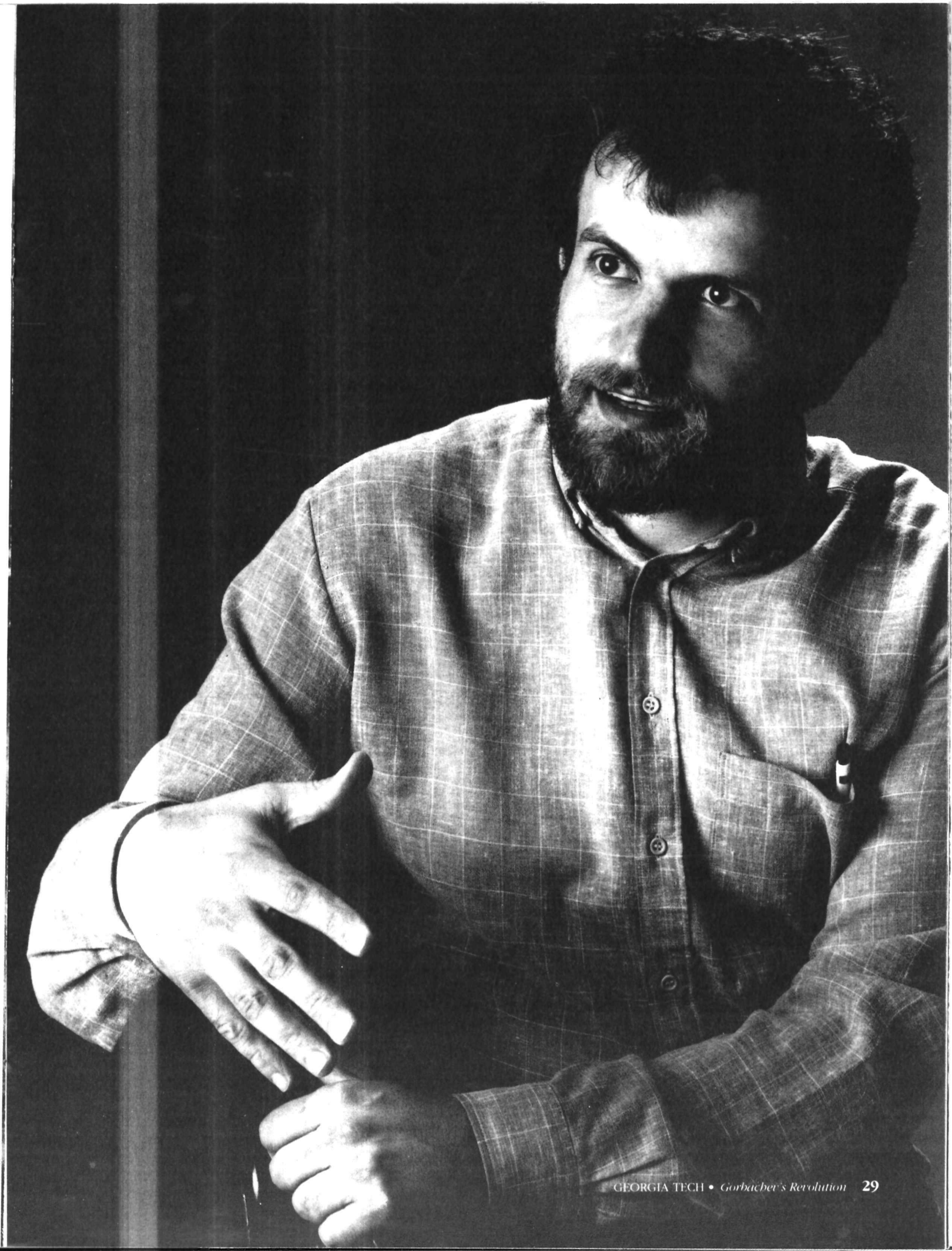
"The Communist Party is like a gang—a criminal organization, worse than the Mafia. The secret police use high technology to monitor all international telephone conversations, they control almost all the letters that come in or out of the country—for sure the letters of the people that they watch: the members of the underground church, the dissidents, the intellectuals. They even spy on each other. Everybody is afraid of everyone else. It is like a hell on earth."

Because he speaks English, French, Spanish and German, Vulcan was able to and converse with sympathetic groups in the free world.

"In a totalitarian system, if the victims are not known abroad, they are just killed," explains Vulcan. "My secret activity was to find out about the unknown cases of oppression and make them known outside the country. If Amnesty International or other human rights organizations knew of a case, the government wouldn't kill the dissidents, it would treat them more or less humanely."

Several years ago, Vulcan, his wife, Dana, and their son, Marius, were allowed to leave the country. They stayed in a refugee camp in Italy for several months. Vulcan contacted a former professor he had studied under at the University of Bucharest who taught at the South Dakota School of Mines in Rapid City, S.D. Vulcan attended the South Dakota school, where he earned a master's degree in meteorology. He was awarded a presidential fellowship at Tech where he is earning his doctorate in atmospheric sciences.

"It's hard for a person who lives in prosperity, with the blessings of freedom and democracy, to understand how it is under totalitarian government," Vulcan says. "I find some similarities with our fellow Chinese students. The same system creates the same monstrosities and horrors everywhere." —John Dunn



The Tiananmen Massacre

China's violent reaction to the people's democracy movement may not dam the yearning to be free

Written by Wan-Lee Yin

Photographed by Gary Meek

"Those who have long enjoyed such privileges as we enjoy forget in time that men have died to win them."
—Franklin D. Roosevelt

In the late hours of the evening of June 3, 1989, troops and tanks of the People's Liberation Army moved along Changan Street toward Beijing's Tiananmen Square. They were under strict orders to clear the Square of all striking students who had for weeks encamped on the square ground and whose demonstrations for democracy had been seen, through satellite transmission, by an amazed world.

Although martial law had been declared in parts of Beijing (with questionable legality, because the power of declaration was vested by the Chinese Constitution in the People's Congress, not in the government), and warnings were issued for the students and civilians to disperse, the police and the military had backed off repeatedly in earlier encounters with the demonstrators. Thus, when the march of troops eventually began, very few expected the brutal use of live ammunition and bayonets, let alone the leveling of tents and crushing of limbs and bodies by heavy tanks.

For fear that large segments of the army would resist orders, two hundred thousand troops were mobilized and sent to Beijing, to be

used against civilians, students, and if necessary, even against rival armies. Several hundred to two thousand people, according to various estimates, were killed by indiscriminate shooting. Before the dawn of the fourth of June, Changan Street and Tiananmen Square were a bloodbath.

The Chinese democracy movement of 1989 occurred at the conjunction of several events of historical and international significance — the 40th anniversary of the founding of the People's Republic, the 70th anniversary of the May Fourth Movement (an early student movement unparalleled in modern Chinese history), the bicentennial of the French Revolution, the Conference of Asian Banks, the historic visit of Soviet President Mikhail Gorbachev, and the sudden death of ousted reformist party chief Hu Yaobang.

The movement was a singular event, but it was by no means accidental. In the past few years, and particularly since the democracy movement of 1986, the political and economic situation in China had greatly deteriorated. Corruption was rampant in all levels of the government. Officials in the highest ranks of the party hierarchy abused and manipulated import shortages and price systems to build personal for-

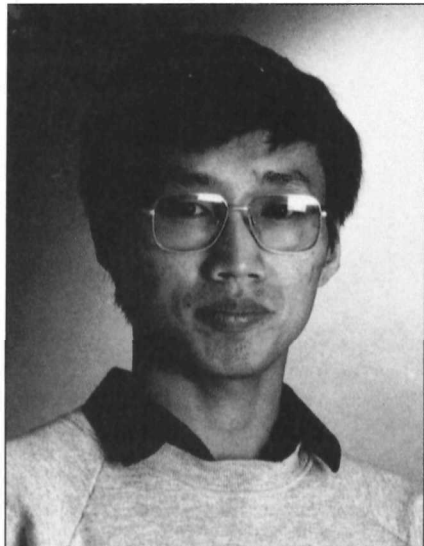
Continued next page



Born in southeastern China in 1941, Dr. Wan-Lee Yin received his PhD in applied mathematics from Brown University. In 1979, he joined the faculty at Georgia Tech where he is a professor in the School of Civil Engineering. Dr. Yin is a founder of the recently established Atlanta Association for Democracy in China, a non-profit corporation organized "to foster the ideas of freedom, democracy and human rights in . . . China" and to promote among the American people "the support of the Chinese democracy movement."



The Tiananman Massacre



"Before the last democracy movement, I didn't care about politics. I viewed talk of the oppressed, talk of freedom and human rights as some kind of politics, and I didn't care as long as I got by myself. But after the Tiananmen Square incident, things have changed. I think this is very important: I should care."

Lin Yang

**PhD student in
engineering science and
mechanics**

tunes. Inflation fueled the discontent of ordinary citizens, while students and intellectuals were outraged by the repressive policies following Hu's dismissal. The movement, started immediately after Hu's death, soon caught the overwhelming support of Beijing citizens and spread to other major cities of China.

The demands of the student demonstrators and hunger strikers were, by Western standards, rather modest. They appealed to the government to take measures against corruption. They demanded freedom of the press and the recognition of autonomous student organizations which, unlike party-controlled student organizations, were deemed illegal. When their appeals proved to be in vain, and when the party newspaper *People's Daily* branded the movement with the very grave charge of conspiracy and inciting to riot, the students demanded the rescission of the *Daily* editorial and requested a dialogue with the highest officials of the government.

Such demands were considered subversive in a country where the common people's appeals to authority must take the form of begging and supplication. The Communist leadership was not accustomed to demands and dialogues on an equal footing. It has never acknowledged errors made at the highest level. Party elders overwhelmingly agreed with China's de facto ruler, Deng Xiaoping, when he observed that, should the party yield but one step to the protestors, there would be no stopping further steps.

From the government's viewpoint, the handling of student demonstrations—the decision to unleash military forces—paled in significance to the power struggle between defenders of orthodox communism and gerontocratic authority, and the pragmatic faction of the party leadership. The latter had advocated a policy of moderation toward the

students and intellectuals. The apparent initial hesitation and indecision masked a behind-the-scenes maneuver which culminated in a wholesale rout of the reformist camps. Ten years of modernization and reform were reversed in one devastating step.

Student demonstrations of 1986 and 1989 prompted swift reactions and resulted in the dismissal of two successive general secretaries, Hu Yaobang and Zhao Ziyang. Had the student protesters, in their impatient demand for freedom and democracy, inadvertently hurt their cause by providing the hard-liners an opportunity to purge the champions of reform? Should they have waited until the reformists had consolidated their powers, or even until Deng had died?

To raise such questions is like asking whether Bostonians should have dumped British tea in 1773, or whether Parisians should have stormed the Bastille in 1789. For better or worse, the democracy movement has crossed a threshold. The June Fourth Massacre was a watershed event that changed a reform movement into a revolution. Before, the people wanted an end to bureaucratic incompetence and official corruption. Now they want an end to the Beijing government and the communist system.

In the intervening weeks Beijing was not in a state of anarchy, notwithstanding claims to the contrary by the communist authority in search of a pretext for the use of military force. The mass rallies were disciplined and orderly. Rudeness of city people was superseded by rare courtesy. There was tremendous outpouring of goodwill—offerings of food, services and supplies from workers and street people to student demonstrators and even to sympathetic soldiers. The spirit of altruism and exuberance became contagious. Responding to the cries of the

Tech students quoted in this article are all citizens of the People's Republic of China.

movement, thieves and ruffians called strikes of their own.

There was, in those days, not a lack of political order but a duality of political orders in the nation's capital. One consisted of an open space of freedom, persuasion, participation, speeches, rallies, food supplies, emergency medical care, communications and liaisons, policing of street traffic, and even the protection of encircled soldiers. The other was a closed and dark space of stifled bureaucracy, secret power struggles, scheming, spying, disinformation, procuring military support and contriving murderous suppression. The contrast between the two political orders is nothing short of the contrast between China's blissful promise and its sad reality.

That open space of freedom, equality and fraternity, that spontaneous display of solidarity, of caring and sharing, speaks truly, and more eloquently than declarations, for the vision of a China that will come. From the troubled birth to the victorious fulfillment, the revolutionary course must, like the Yellow River, meander through tortuous terrains and hazardous passages. But the train of revolutionary events, once set into motion, carries with it the solemn gravity of destiny.

The Beijing spring of 1989, as short as fate would allow it to be, was the only moment of sweetness in the Republic's memory.

The massacre and the mobilization of hundreds of thousands of troops showed how little the communist leadership has changed. In spite of their exalted positions within the party hierarchy, Hu and Zhao were the instruments of party elders. The ultimate power, which in a crucial moment decides the fate of the nation and the course of China's future, still rests with the one man who controls the army. That man and his octogenarian comrades are

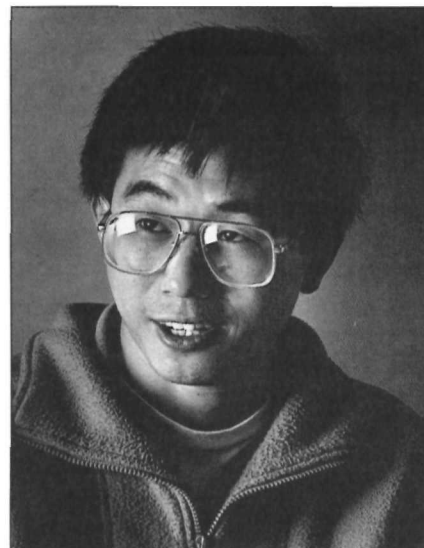
concerned with nothing but their political survival. In their lives they have never failed to use force and violence to crush opposition and silence dissidents. The June Fourth Massacre and the ensuing repression were but one of a series of recurring back currents in the history of Communist China.

As in the Great Leap Forward of the fifties and the Cultural Revolution of the sixties, the seeds of disaster are deeply rooted in the system itself, and nothing short of a revolution from below could rid China of the structural evils. Coming after a decade of respite and relative prosperity, the Tiananmen massacre shocked even some of the most seasoned observers of Chinese politics. Yet in retrospect, it was the only logical consequence of an ideology which sets no limit on the power of the ruling class, where the actions of the ruler are not answerable to his own law. Even the dynastic emperors were constrained by tradition and ancestral teachings; yet the only tradition in 40 years of the Chinese Communist regime is recurrent persecution and destruction. The only accepted teaching is that of class struggle and the dictatorship of the top ruler.

As the community of nations east and west evolves toward a new world order in the waning years of the twentieth century, Chinese communism clings stubbornly and pathetically to a fundamentalism that has been forsaken by its estranged kin in eastern Europe, and even in Russia.

A decade of Cultural Revolution left China with a generation of uneducated illiterates. That generation had no vision and expertise to function effectively as the backbone and the middle management of the country's reform programs. A decade of open-door policy produced a generation of future leaders and technocrats. That generation, strongly influenced

Continued next page



"The Chinese people need some democracy. The Chinese government calls it reform. We hope that this will happen, and that democracy will be in China. It could happen, you know, just like it's happening now in Eastern Europe."

Xingyong Chao

***PhD student in
electrical engineering***

The Tiananman Massacre



"We see what has happened so dramatically in Eastern Europe. I think something similar could happen in China, but it would be slower, because the cultural background is different and the tight grip on power is still there."

Jianfa Pei

PhD student in mechanical engineering



"China is greatly backward, and the people—the majority of them—are farmers and not well educated. They have a poor concept of democracy. They are educated by the current regime. You have to undo that and give them some new ideas. . . . If we want democracy in China, we'll have to fight for a while."

Gang Luo

*PhD student in atmospheric sciences
Editor of the Chinese paper, Forum on Democracy, published on campus*

by Western thought and now stripped of some of its most vocal leaders, will work against the communist government. The generations that grew up in the fifties and early sixties are already repentant of their past faith and devotion to communism. Between the old guard leaders of the original communist revolution and the next generation of would-be believers and crusaders, there stands a huge void and an immense distance spanning more than a half century of age gap.

Meanwhile, problems of poverty, overpopulation, underdevelopment, economic stagnation, lack of resources and capital, mismanagement and corruption will not be solved. The conflict between slogan and reality will not disappear. The truth heard all over the world will not be covered by lies. The call for freedom, justice and retribution from the living and the dead will not be silenced. For the aging leaders as well as for the billion people, time and history will not stand still.

The movement for democracy in China has been suppressed, but it has not been defeated. In the vision of some, it may have met its anticipated end—a tragic end that is at the same time a new beginning.

Within months after the June Fourth Massacre, democracy movements were sweeping across the nations of eastern Europe. Learning the lessons of the Tiananmen massacre, their old-guard leaders submitted to the will of the people. Only the Romanian dictator took the poison of Chinese advice, and paid for the crime with his life. Although the revolution in China has not yet succeeded, it has already inspired giant strides toward democracy and freedom on the other side of the globe. The fallen heroes of Tiananmen Square have not shed their blood in vain. ■

**Q. When
does a
little
really
mean
a lot?**

A. When it's a contribution to Charitable Life!

Georgia Tech Charitable Life, Inc. ensures a lot of Tech's future for just a little money. Through the Charitable Life program, you can arrange for Tech to be the beneficiary of a \$50,000 life insurance policy for premiums as low as \$2.81 per day or less, depending on your age.

You can use this cost-effective method to support the Georgia Tech Foundation, Inc. and/or the Alexander-Tharpe Fund, Inc. Your gift helps guarantee a generous endowment for Georgia Tech.

Tuition at Georgia Tech turned out to be one of your best investments; now, make a good investment in the future of Georgia Tech through the Charitable Life program.

Yes!

I would like to learn more about Georgia Tech Charitable Life.

☐ Alumnus or friend ☐ Insurance agent

Name _____

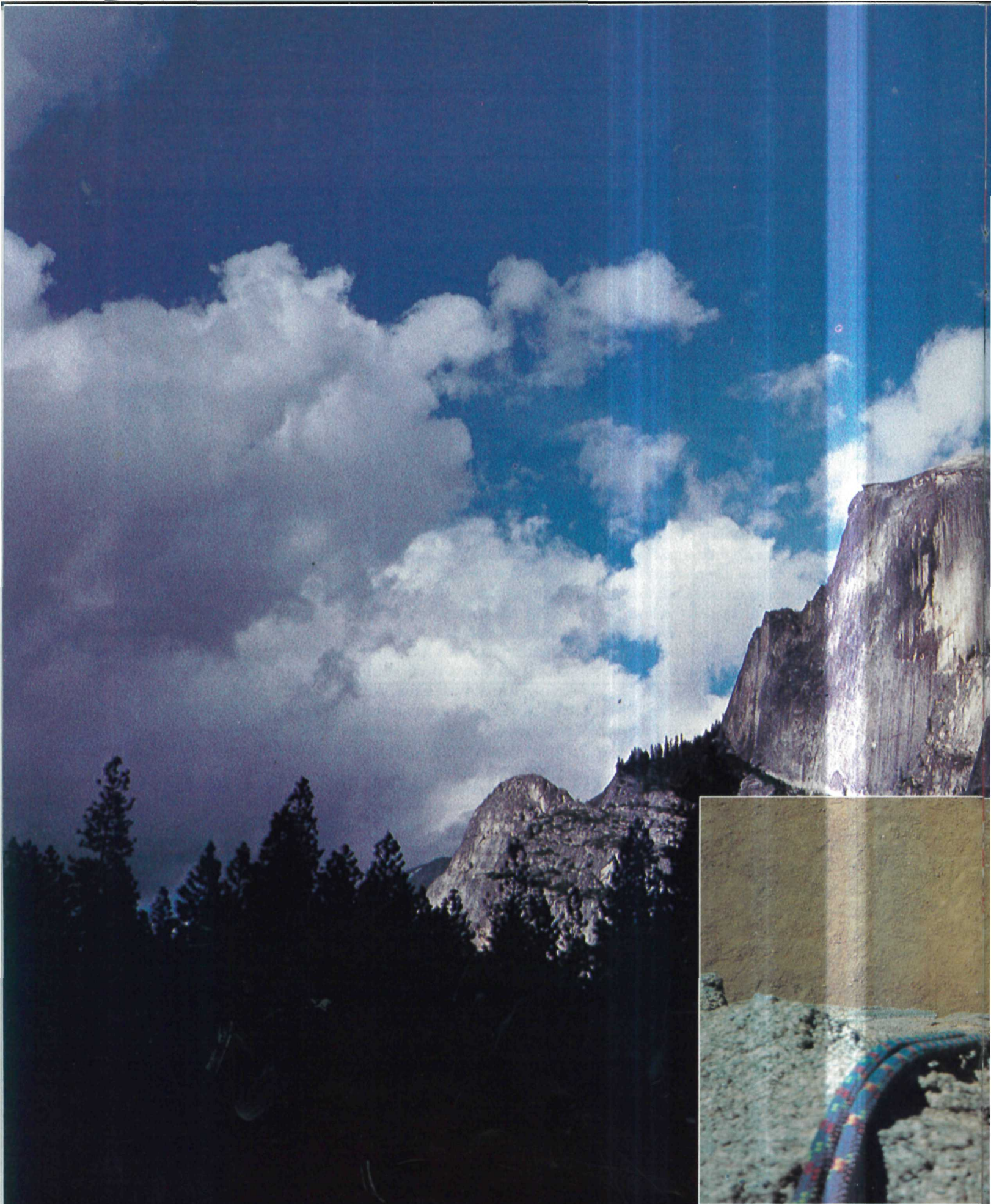
Major _____ Year _____

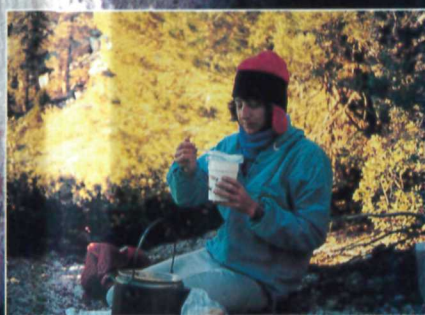
Address _____

Phone (____) _____

Return this card to:

William T. Lee
Executive Director
Georgia Tech Charitable Life, Inc.
Georgia Institute of Technology
Atlanta, Georgia 30332-0220
or call (404) 894-4678





Peak Performance



For Susan Zazzali, a civil engineering senior, and Penny Jordan, ME '86, MS ME '88, the most difficult part of climbing Mt. Whitney was finding it.

Located east of Fresno in central California, Whitney is the tallest mountain in the contiguous U.S., rising to 14,494 feet above sea level.

The two women made the ascent over Labor Day weekend last year, fulfilling a long-time desire.

The unmarked route to the base camp, located at about 12,500 feet, was the most grueling part of the

trip, recalls Zazzali. Each woman carried a backpack weighing about 55 pounds for the long and difficult trek, which was further complicated when they went up the wrong canyon on their first day and became lost in the convoluted topography of the slopes. With their water supply perilously low, the exhausted climbers elected to pitch camp for the night.

In the crisp morning light, Zazzali and Jordan were able to get their bearings, locate a stream, and continue the hike to base camp.

After a difficult beginning, two Tech students find climbing Mt. Whitney was the realization of a long-time dream.

Continued next page



Despite blisters, aches and breathing problems—especially during the traditional “antler dance,” the Tech women found the climb was “a blast.”

From there, the pair made the final push to the summit in a “reasonably good” time of only eight hours, Zazzali says. Technically, the climb was relatively easy for the two experienced climbers, who were introduced to the sport through Outdoor Recreation Georgia Tech (ORGT). But the altitude was another story.

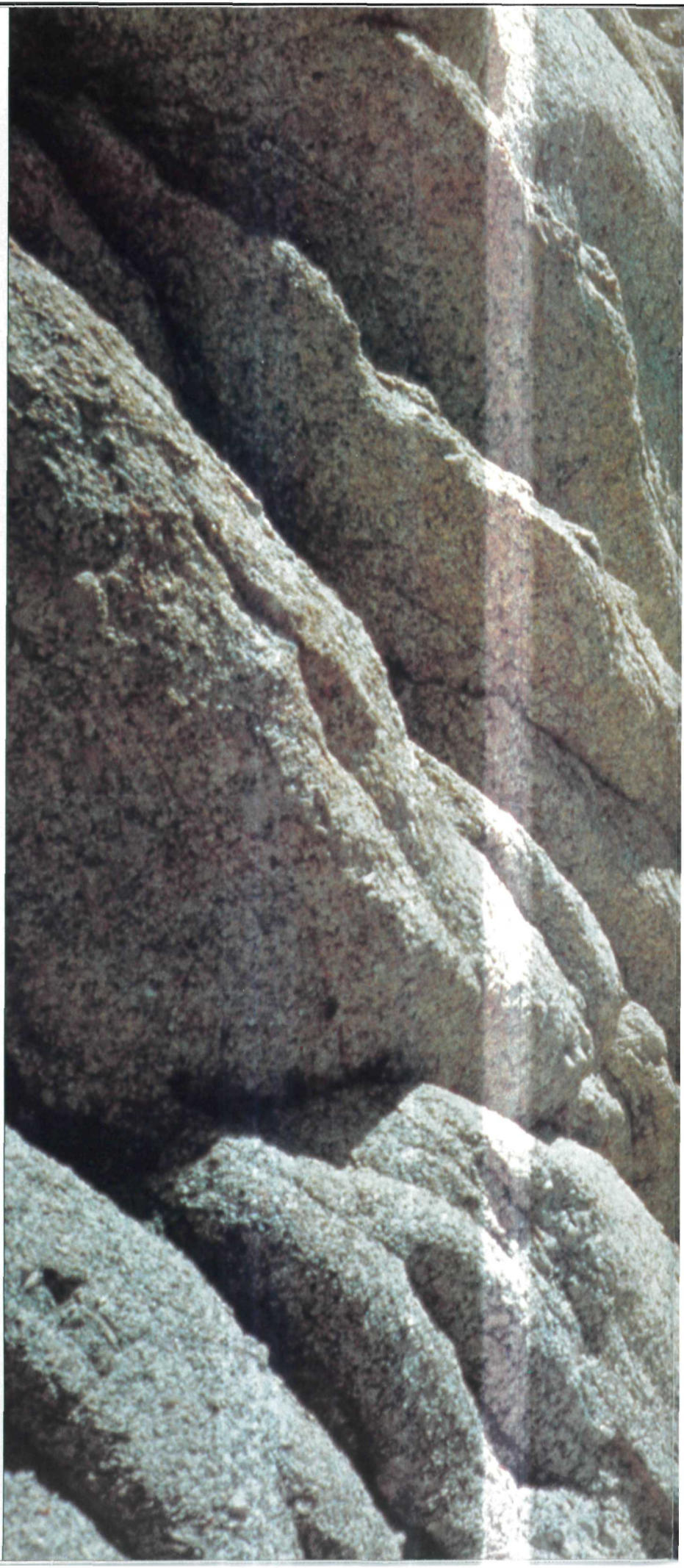
“At times you’re just so tired and you can’t breathe,” Zazzali says. “That made it plenty hard for us.”

Zazzali offers a one-word description for the top of Mt. Whitney—“stark.”

“There’s no vegetation, no grass, up there,” she says. “At sunset, it looks like you’re on the moon—there’s no color.”

On the summit, Zazzali and Jordan performed an “antler dance,” a tradition among ORGT climbers when they reach the top of a mountain. “Usually you don’t hold onto each other, but I couldn’t stand up without support,” Zazzali says, laughing.

The experience was definitely worth the cost it wrested in aches and blisters, says Zazzali, who adds, “We had a blast.” ■





And Now The Award For "Not Just Thinking About The Future, But Creating It..."

It all began with a vision.
With an idea of what the future held.
And a *plan* to turn that dream into reality...
the reality of Technology Park/Atlanta. Of
Johns Creek. Of Lenox Park.
You're looking at perhaps the only thing

our Master Plan *didn't* include:
Winning the very first Governor's Award
for Excellence in Real Estate in 1989.
Our family of high-tech corporate tenants
have always shared our vision. We hope they
share our pride in accepting this award.



Some People Just Think About the Future. We Create It.

TECHNOLOGY PARK | ATLANTA, INC.

TECHNOLOGY PARK/ATLANTA ■ JOHNS CREEK ■ LENOX PARK

40 Technology Park/Atlanta Suite 300 Norcross, GA 30092 404-246-6000

Office Automation: Boon or Boondoggie?



Technology is often under-utilized, which is analogous to using a chain saw like a handsaw.

Written by Gary Goettling

Photographed by Gary Meek • Illustrated by Tim Williams

Multi-billion-dollar corporate investments in micro-computers have not paid off in increased productivity in many cases, according to management Professor David M. Herold.

While there are many office automation success stories, too many companies have wasted both money and technology on automation efforts that were poorly planned and implemented, says Herold, who is also director of the Center on Work Performance Problems at Tech.

"We're finding that with any automation—factory or office—one should look at the whole product,

not just a specific job, and say, 'What can be made more efficient if we were to automate it?'"

A big mistake that many companies make is to think of automation in terms of specific tasks, Herold adds. The result is that "you've automated 15 different jobs, but without necessarily gaining the synergy" for better productivity, he says.

"There's no doubt that computers make work easier, but that doesn't necessarily correlate to making work more efficient or more productive or more profitable," says Donald J. Plummer, former communications manager for the Advanced Technology Development Center on the Tech campus and now client service

manager for Duffey Communications in Atlanta.

In many cases, computers only have enabled people to do more "detail work," he adds. "The same work gets done; it just gets done in much more detail."

Plummer's observations are reinforced by a study done by the consulting firm of Nolan, Norton & Co. in Lexington, Mass. Using research by economist Lester Thurow of the Massachusetts Institute of Technology, the study concluded that the growth of office productivity in the 1980s has increased at a level far below average for America's post World War II economy.

In terms of office automation, the
Continued next page

finding is significant because "much of the activity that's gone on in automation has been directed at doing things for people in offices," says Paul Clermont, a principal with Nolan, Norton. "We have a productivity problem in America," he says, paraphrasing Thurow. "It's not in the factory, it's in the office."

Clermont says that companies should view automation not only as a productivity issue, but as an opportunity to evaluate their whole way of doing business. Computers may make it easier for people to produce material, which results in them simply producing more of it. "But is this what you want them to do?" he asked.

For example, the advantage of being able to do computerized spreadsheet analysis with fewer people has not been taken by many businesses, he says. "In fact, they're doing more analysis.

"You see the same thing in engineering companies that use computer-aided design. The engineers haven't been made more productive in a measurable sense; they can iterate the designs more often and change things at the last minute. They can get the last gram out of an airplane wing or whatever, but that's not necessarily what the expectation was putting the system in."

Incompatibility has created an electronic Tower of Babel.

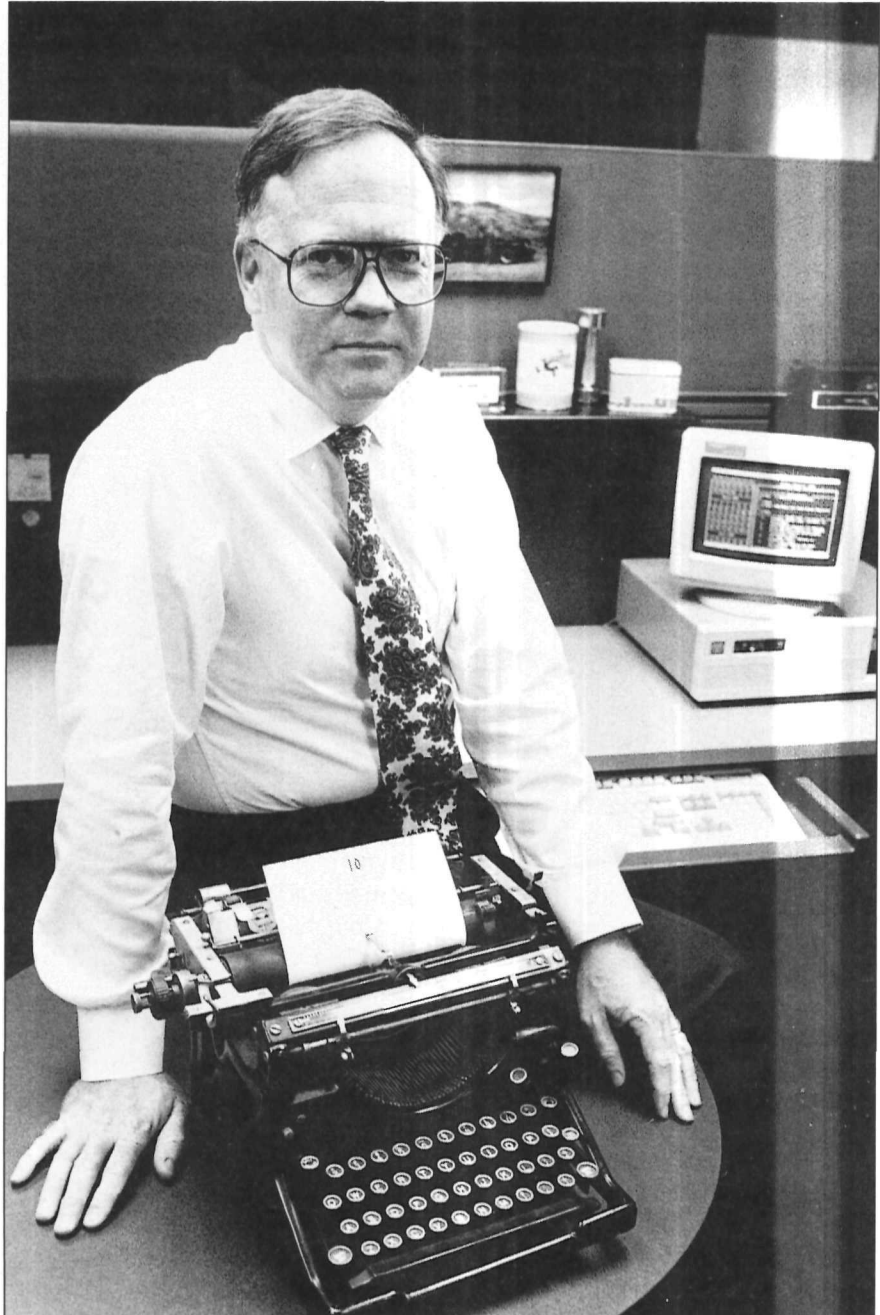
The automated, "paperless" office was widely touted in the euphoria over the potential of technology that marked the early '70s. The Apollo space program put 12 men on the moon with computer technology no more sophisticated than the Commodore 64. Yet 20 years later, with machines hundreds of times more powerful, the comparatively modest goal of automating the office has had difficulty getting off the ground.

The comparison is not entirely fair, of course; NASA's technology may have been primitive by today's standards, but billions of dollars were spent on it, making up in quantity what it lacked in quality.

Nonetheless, many businesses were caught up in the technology fervor of the '70s and '80s. With literally thousands of products avail-

able from dozens of vendors, businesses found it easy to automate individual office functions: word processing, spreadsheet analysis, databases.

But the integration of those functions into a true office automation environment, with shared access to information, proved to be quite a different story when expectations



Don Plummer, with an old "friend" (foreground) and new "friend" (background): "Almost anything that can be done manually can also be done on a computer. But does it need to be done on a computer?"

collided with reality.

Rather than the more efficient, more productive office of the future, many businesses found themselves in an electronic Tower of Babel with less efficiency, less productivity—and a huge debt for equipment.

The cost of automation, according to Plummer, is equivalent to “putting a new piece of machinery in a manufacturing plant, or hiring a salesperson.” Systems can run anywhere from a few thousand dollars to hundreds of thousand, depending on their capabilities and complexity. In addition, there is the expense in time and dollars of training people to use the new equipment, and a temporary slowdown of productivity as the system is implemented.

In that context, Plummer contends, the real issue is not technology, but improving productivity. “A computer may be a part of the solution, or it might not be.”

“A well-thought-out, well-implemented office automation project is clearly a good thing if you’ve reached a level where automation can do something for you,” Herold agrees. “If you allow automation to do that which it does well, you may find major savings.”

Companies need first to analyze thoroughly what they do and how they can work more efficiently, then study how computers can be used to implement the new measures.

“I think that people haven’t done that, and that’s one of the reasons for a lot of people’s disillusionment with computerization and automation,” Plummer says. “Almost anything that

can be done manually can also be done on a computer. But does it need to be done on a computer?”

“Unless you’re going to see economies of scale, increased productivity or increased profits, you shouldn’t do it,” he adds. “In almost every case you can find those benefits, but if you don’t start off looking for them, you will never find them.”

The computer industry is its own worst enemy.

Office automation has alienated many of its former advocates. The reasons for the turnaround include:

- **Poor interface technology and lack of standardization.** Communication between different makes or models of machines can be difficult, sometimes impossible.

- **Complexity.** Computers can be so difficult to use that people say, “Why bother?” “It’s like having to teach someone how to drive every time you sell him a new car.”

- **Software availability.** Sophisticated word processing and number-crunching software is readily available, so it’s not surprising that many offices have automated those functions. But there is a serious lack of non-financial software for specific industries such as health care, real estate and homebuilding. The alternative is expensive and time-consuming custom programming.

- **Fear of obsolescence.** Many businesses have been put off to

automation because they are leery of the fast pace of innovation. Scarcely a week goes by without some announcement of a “revolutionary” new product. The computer industry has become its own enemy by imparting a sense of obsolescence to potential buyers.

The computer industry itself must share the blame for office automation’s poor showing. In Plummer’s words, “they’ve been selling features rather than benefits; technology rather than solutions.”

The industry has been criticized for hyping technology as a panacea to a host of productivity problems without delving into other important factors: work requirements, ongoing support and training.

The computer industry has taken the approach that “we have something that nobody has been able to do before, and therefore you ought to buy it,” Plummer says. “It’s a myopic and short-term approach to the sale of its products, which I think is ultimately self-defeating.”

Still, the trend toward office automation persists, if more slowly than the so-called experts had predicted. The computer has simply too much potential to be left out. The industry has recognized the importance of compatibility and is now paying more attention to development of better interface technology. Many new products are being developed for a specific work context, rather than simply high-tech for its own sake. A new focus on practical applications may re-invigorate the promise of integrated office automation.

Applied Computer Savvy

Bryan Toney has made a believer out of Doug Weaver. Toney, who received a master’s degree in management from Georgia Tech in 1984, is president of Atlanta-based Information Management Inc. Over the past three

years, Bryan’s company has helped automate the Georgia Department of Industry and Trade’s Research Division, where Weaver works as director.

The Research Division serves as a business development information center for the state of Georgia and

creates presentations for Industry and Trade’s business recruitment activities. The division also publishes four major information directories—*Georgia Manufacturing Directory*, *International Trade Directory*, *Directory of International Facilities*, and the *Manufacturing Wage Survey*.

Continued next page

The decision to automate the data-intensive activities of the division was not made without reservation, Weaver says. "We were excited about the potential [of automation], but somewhat intimidated by the technical process of converting everything to microcomputer." The only computer in the division was a dedicated word processor.

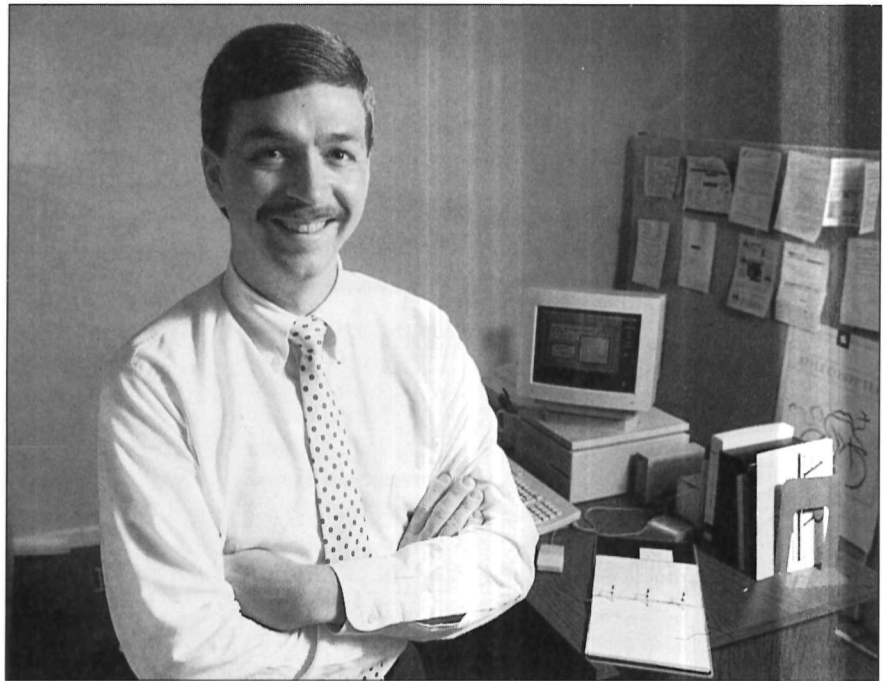
Large databases of addresses and statistics are at the heart of the division's activities. Previously, the information was kept on the state's mainframe. "We had to contract with the state computer agency to input programs and produce documents for us," Weaver says. "It was very time-consuming and cumbersome, and we didn't feel that we had full control over what was coming out."

The 15-member Research Division staff now uses a network of nine Macintosh computers. Their software packages include 4th Dimension and Double Helix for database management, Excel for data analysis, Microsoft Word and Pagemaker for documents, and an electronic mail system.

With database management and maintenance now done on site, the division saves about \$4,000 annually in keypunch and mainframe connection charges, Weaver estimates, with data entry and preparation time cut by 70 percent overall. In addition, staffers can update the databases daily, an important consideration in creating sales presentations.

"We put together information packages for industries that are thinking about locating in Georgia or expanding their existing business here," says Weaver. Since business prospects may be looking at as many as 50 locations in 15 different states, "the quality of the information they get is very important."

"We've got to present our data in a highly readable and accessible form using as many graphics and maps as possible—and it has to be current."



Bryan Toney, MS MGT '84: Starting out with only an idea.

The state with the best preparation and presentation is often the one that gets the new business, he emphasizes.

Problems also bring opportunities for entrepreneurs.

The Research Division is an exception among state agencies—not just in Georgia, but nationwide. According to a study released last year by COMTEC Market Analysis Group, state governments rank at the bottom among groups that have implemented office automation technology.

But dealing with the exception has become a thriving business for Toney, who founded Information Management in 1985 with only an idea and a single employee—himself. "When I started out, nobody in Atlanta was specializing in Macintosh," says Toney, whose company now employs five people.

Toney saw an opportunity to provide customized service to Macintosh users by automating key office func-

tions and then, where appropriate, integrating those tasks electronically.

"Most people can figure out how to use a computer themselves," he says. "The majority of our work is in custom application development."

Toney says that many office automation attempts fail because the companies try to do it themselves.

"Outside expertise is necessary to advise and support an automation project, unless a company is lucky enough to have a computer whiz in-house," he says. "Even then, an outsider's 'second opinion' can help prevent costly errors."

But a "second opinion" can also be costly if a consultant is not chosen carefully, Toney cautions. Referrals from local user groups or computer dealers are the best sources of names.

"In general, people don't go to the Yellow Pages to find a company to develop a complex database system that's really going to make or break the business," he says. "They want to make sure they've got somebody they can trust; somebody who's been there before."

A majority of the people who call

Continued page 47

DON'T LET
OUR YELLOW JACKET
WEEKEND FLY BY.
\$100 PER NIGHT.

Take off for a grand weekend
at The Ritz-Carlton, Buckhead. Where
you can shop next door at Phipps
Plaza and Lenox Square. Give our pool
and fitness center a workout.
Then retreat to a gracious room with
a lovely view of Atlanta. Just
call 800-241-3333 or 404-237-2700
for reservations. And ask for the
special Georgia Tech rate (subject
to availability). At a price
that doesn't sting.

THE RITZ-CARLTON
BUCKHEAD



This shouldn't be the way you turn on your copier.

AND you shouldn't need a Masters of Engineering from Georgia Institute of Technology to keep it in proper running order.

But these days, if you don't know how to rewire your Coronas or replace your exposure

CALL SERVICE

lamp, chances are your copier's down again. Now rather than accept copier breakdowns as inevitable, you have a choice. You can pick up the phone and call your service technician for the umpteenth time.

Or call your local Acme representative for the very first time.

Before we show you the technology behind Ricoh's latest copiers, we'll inform you of the facts that stand in front

Copier's out of order

of them.

Like the fact that Ricoh is one of the largest manufacturers of copiers and facsimile in the world. And the fact that Ricoh engineers work to make certain that when you're on a deadline, your equipment's not on downtime.

Finally, we'll discuss a little something called commitment from Acme, a company with one of the most extensive service networks we hope you never use.

So, if you're having trouble keeping your spirits up every time your copier's down, DO WHAT THE GEORGIA TECH ALUMNI ASSOCIATION DID. Call Acme and ask about Ricoh. (Or call Tech's Admissions office, and ask for a student loan.)

With Ricoh products, Acme's 18 years experience and 18 offices throughout the Southeast, ACME IS YOUR SAFE CHOICE IN COPIERS AND FACSIMILE!

RICOH



Presented by

Acme Business Products

An **ALCO** Office Products Company

For a free demonstration contact the Acme office nearest you.

Albany, GA 912/432-2344; Athens, GA 404/353-0368;
Atlanta, GA 404/246-5500; Augusta, GA 404/863-2263;
Brunswick, GA 912/264-6675; Columbus, GA 404/327-5114;
Dothan, AL 205/793-0005; Ft. Walton, FL 904/664-2707;
Gainesville, GA 404/531-0593; Griffin, GA 404/227-5566;
Gulfport/Biloxi, MS 601/865-0406; Hilton Head, SC 803/686-2050;
Macon, GA 912/788-7416; Mobile, AL 205/342-9458;
Montgomery, AL 205/271-1413; Pascagoula, MS 601/762-3061;
Pensacola, FL 904/474-0226; Rome, GA 404/295-7247;
Savannah, GA 912/232-6576; Waycross, GA 912/283-2767.



OFFICIAL SPONSOR
ALUMNI MAGAZINE

themselves "computer consultants" are simply individuals working out of their home or moonlighting after a full-time job, Toney says. A drawback to using those people is that "it's impossible for one person to know it all," Toney explains. Response time is another potential problem, he said. "If the client wants to make a change in the system or discovers an error in it, and it takes the guy two months to fix it—that's unacceptable, especially for a small business."

Automation is great . . . when it works.

Information Management has worked with more than 100 companies ranging in size from one-person shops to Fortune 500 firms, Toney says. The experience has showed him that there is no such thing as a "typical" client.

"Even two companies of the same size, in the same industry, have different needs," Toney says. "They have different ways of looking at information, different ways of analyzing the market."

Clients also have different ways of looking at the whole issue of automation.

"I was probably the most anti-computer person you could find," says Bill Kasparvich, who until his recent retirement was a vice president in charge of bankruptcy control for C&S Bank.

Two years ago, Information Management automated several key areas of the institution's Bankruptcy Control Center, and in the process won a convert.

"If we hadn't gotten our computer system, I would have had to add an additional three or four people," Kasparvich says. Although the center's activity has increased by more than 50 percent, only one new staff member has been needed, he notes.

For example, a ledger card system for tracking bankruptcy collections was replaced with an electronic application that closely matches the former method. With more than 2,500 cards and growing, the process of manually finding, filing and updating cards was a full-time job in itself.

Now the "cards" are quickly located on the computer screen and new information is added. The computer calculates the current balance and even generates a number of summaries. The time spent on updating bankruptcy collections has been reduced by half, and posting errors have been virtually eliminated, Kasparvich estimates.

The automation of C&S's Bankruptcy Control Center has reached its current level in a series of projects executed over many months. From virtually no automation, the center now has six users, a file server, laser printer and dot matrix printer. The system runs two relational database packages, plus Word, Excel, File-Maker and QuickMail.

The duration of other automation efforts varies greatly, depending on the complexity of the assignment, the resources available and other factors.

"One of the more difficult parts of our business is estimating how long it takes to do a project," Toney says. "We try to give a pretty concrete estimate of time and cost up front, but there are so many variables and so many things that are likely to change."

One such variable is the client's personality.

"A client who's more likely to make changes throughout the project is going to cost more than somebody who's very explicit and doesn't change," he notes. "You learn how to read a client very early on."

And in the process, as Bill Kasparvich knows, you might even change someone's thinking about computers.

Purging Computer Problems

Erick Schweber knows the frustration of expectation not meeting reality. A graduate student at Tech working toward a doctorate in physics, he is also a consultant with Computer Professionals Inc. Last year, he and his partner and wife, Linda, helped automate the office of Coverdell & Co., an Atlanta insurance company.

At the heart of Coverdell's business is its credit card registry, which allows cardholders to report changes in address, or lost or stolen cards, with one phone call. Originally, the service was operated manually, with a customer service representative looking up the appropriate information on a computer printout. Since the average credit card holder has 11 pieces of plastic, the process was very time-consuming.

To speed things up, the database was put on a Compaq 386, which was then the fastest machine of its kind, running R:base 5 software. Still, the process of verifying address and credit card information was taking as long as 10 minutes—no faster than doing it manually. The attractiveness of the registry—being able to update the status of all one's credit cards with just one call—was being compromised by the length of time callers had to be on hold while the information was retrieved.

"We were asked to try and get that time down to 4 minutes," Erick recalls.

"The first thing we had to do was understand the business," Linda says. "That's the real key to building a system that works for people: to understand what business they're in, what their goals are, what they need

Continued next page

OFFICE AUTOMATION

to accomplish and what kind of constraints they have. Knowing what kinds of letters they have to send to people, for example, told us a lot about what kind of data we needed to be maintaining."

Whereas most PC mailing lists have from a few hundred to a few thousand names, Coverdell's computer was slowed under the burden of nearly a half-million records. The Schwebers were able to cut the query time down to six minutes, "but there was no way we could get it faster with existing equipment," Erick says.

They quickly realized that the R:base 5 software was inadequate for the company's needs. They switched to a package called Oracle, the first relational database, which had just been released in a microcomputer version. To expand Coverdell's record-keeping capability, Erick tried a relatively new concept called a distributed data-

base, which enables two different databases residing on two different microcomputers to work together, essentially providing mainframe-size capability on PCs.

When all else fails, phone again. And again.

Judging by computer magazines, the distributed database had been available for a couple of years. But in the process of setting the system up, "there was problem after problem. The documentation wasn't always right. One vendor's software or hardware wouldn't work with someone else's, and it took forever to get answers to questions."

It only seemed like forever. Erick counted more than 130 telephone calls among five different vendors before he was able to get the system installed and working. Finally, one of



Erick and Linda Schweber

those vendors confessed that he, Schweber, was one of only two or three people in the country to put together a microcomputer distributed database that worked. "It's amazing," he said, shaking his head.

The new system is an IBM PS/2 running Unix and a Compaq 386

The Alexander-Tharpe Fund is pleased to present...

"THEY SAID IT COULDN'T BE DONE!"

by Wallene T. Dockery and Steve Williford

THEY SAID IT COULDN'T BE DONE! profiles the exciting life-changing principles of Homer Rice, Director of Athletics at Georgia Tech, which have transformed a sleeping giant into a landmark sports program.

In this entertaining and informative book, Dr. Rice explains how his "Attitude Technique" can work for you as it has for Georgia Tech coaches, athletes and many others.

You'll learn how to set goals and achieve them, develop self-confidence in yourself and your abilities, and how the "boomerang effect" can change your life to be happier and more fulfilling.

THEY SAID IT COULDN'T BE DONE is a book for anyone, regardless of age or interest in sports. It's a book you'll want to share with others... a book you'll enjoy today and benefit from tomorrow.

(The proceeds from this book will be donated to the Alexander-Tharpe Fund for the student-athlete Total Person Program.)

To order your copy
Send check or
money order
made to:

GTAA
150 Third St., N.W.
Atlanta, GA 30332

Name _____

Address _____
Street City State Zip

Phone No. () _____

Number of books ordered at \$11.95
plus \$2.00 Postage & handling _____

Total \$ _____

running DOS, connected to Coverdell's Novelle network. Most of the programming necessary to make the distributed database work is unique, making Coverdell's system the only one of its kind in the country.

Customer information can now be retrieved in two seconds, Erick says. "We also gave them a lot more functionality," he adds. "Before, even in the R:base system, all they could do was look up a person's data; anything else would have to be done manually. If they needed to actually file lost/stolen reports they'd have to type them up."

The new system includes 25 commonly used reports and form letters. For easy use, nine menus and extensive on-line help are employed. "You don't have to carry around a lot of expert knowledge of how the business runs because the knowledge is in the software," Erick says.

The system is also capable of interacting between Coverdell and banks. Since Coverdell's new customer data originates with banks, the system must be able to communicate with the older, COBOL-based mainframes used by most financial institutions. Conversely, updated information for billing and other purposes that Coverdell receives must in turn be communicated to the bank's computer.

The Oracle software is also able to maintain a complete on-line history of all subscriber contacts, as well as provide for future business growth. The system now contains about 3 million records, and can accommodate twice that number.

For adding new information to the database, the Schwebers integrated a hand-held bar-code reader into the system.

When it comes to office automation, Erick has learned that stubbornness can be as important an attribute as competence. "You really need someone who is scrupulous and extremely detail-oriented to the point of obsession to get it right," he concludes. ■



Atlanta

1996

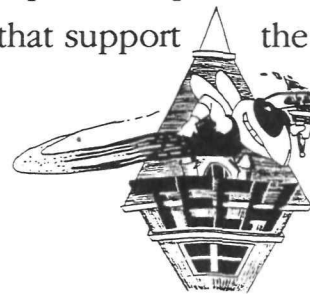


CATCH THE SPIRIT!

Hosting the 1996 Summer Olympics in Atlanta means international recognition and prestige for Georgia Tech since it will be transformed into the 1996 Olympic Village.

So, the Georgia Tech Olympic Coalition (GTOC) is engineering a spectacular effort to help the Atlanta Organizing Committee (AOC) win the Olympic bid. You can help, too! Purchase a GTOC T-shirt or beverage holder printed with the GTOC and AOC logos that appear in this ad and show your support for the 1996 Summer Olympics. All proceeds will fund GTOC activities that support the bid.

This offer is made possible by the GTOC and the Georgia Tech Alumni Association.



Please send me:

___ GTOC T-shirts @ \$12.00 (shirts are 100 percent cotton, gray with four-color logos: GTOC on the back and AOC on the front pocket)

Small___ Medium___ Large___ Extra Large___

___ GTOC Beverage Holder @ \$4.00 (beige with four-color GTOC logo)

I have enclosed \$_____. (Please make check payable to GTOC.)

Name_____ Phone_____

Address_____

Return coupon and check to GTOC, Office of Contract Administration, Georgia Institute of Technology, Atlanta, Georgia 30332-0420

Challenging the Unknown Written by Karen Buttermore

Diversity, intellectual challenge, and true enjoyment of research characterize Professor Jerry H. Ginsberg, who was recently named to the George W. Woodruff chair in the School of Mechanical Engineering.

"There is an enormous spread of ideas that interest me," Ginsberg says. "When I see research issues, I like to be among the first to publish in that area. When I've satisfied all my questions and uncertainties, I go on to something new."

"There are so many open questions in the world, so many unknowns, that there is no way I can be satisfied with considering one small area," he continues. "It's a challenge right now to confine myself to vibrations and acoustics."

Ginsberg enjoys carrying out research. "To me, it's like a hobby or recreation," he declares. "I find it fascinating that there are so many things that I can work out and figure

out. Research provides a sense of accomplishment."

Ginsberg's research skills have translated into nearly \$3 million of external funding for research projects at Tech, where he has been principal investigator for 13 research grants. With a newly awarded \$600,000 grant from the Office of Naval Research, a faculty team headed by Ginsberg will study acoustic scattering, a sonar problem.

"Sound waves arriving from shell structures with rubbery coatings present a problem that involves a broad range of spatial and temporal scales that make for a challenging modeling and computational problem," Ginsberg explains. "There are a lot of basic physical questions associated with this project."

In the teaching arena, Ginsberg has consistently received high ratings in student course critiques. In 1983, he was voted Faculty Member of the Year by the Graduate Student Senate

of Georgia Tech. "I enjoy teaching and like to remain involved in the classroom," he says.

Ginsberg is the co-author of five textbooks in the areas of statics, dynamics and advanced engineering dynamics. He has had 45 technical papers published, and is the author of more than 80 invited and conference technical presentations.

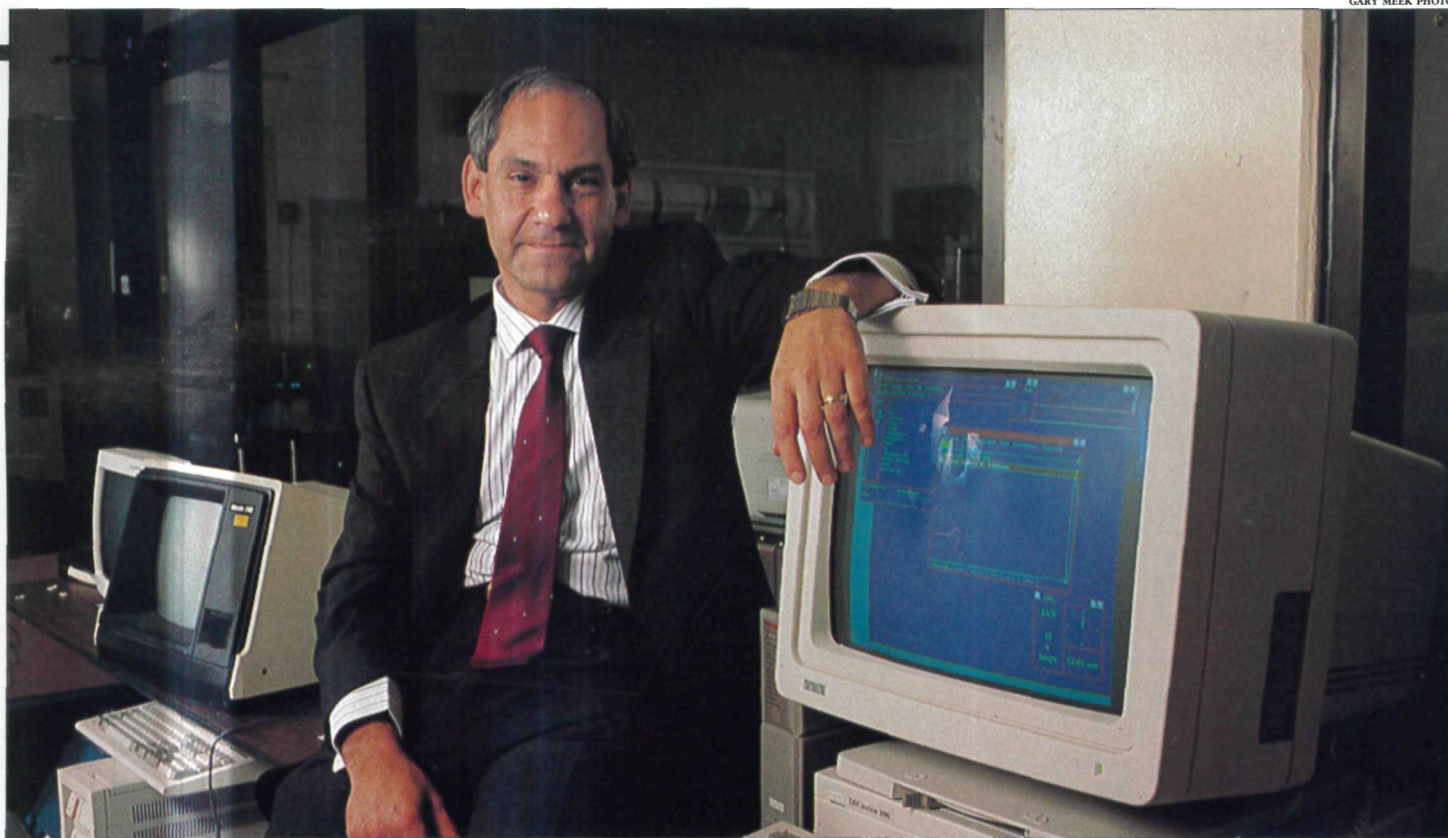
Ginsberg has been chairman of the Mechanical Engineering Undergraduate Curriculum Committee since 1988. "We have done a zero-base study of mechanical engineering as a discipline," Ginsberg says. "We re-designed the program completely, breaking it into four components: basic sciences, mathematics, mechanical engineering core and electrical engineering. We are proposing three-hour courses, rather than five-hour. Our theory is that students learn by multiple passes at different levels of sophistication. Certain areas are necessary for a common base, and when students become more focused, they can split off to either mechanical systems or thermal systems."

Ginsberg says the committee is proposing that the number of hours required for graduation be reduced from the current 206 to, ultimately, 183. He says that the committee looked at mechanical engineering programs at other universities and found that Tech had one of the highest required hours.

"The undergraduate curriculum should provide tools to learn, and expose students to open questions," Ginsberg says. "Engineering is a continual process of education on both the personal and graduate

The Ginsberg File

- **1965:** Graduates from Cooper Union with bachelor's degree in civil engineering.
- **1965:** Receives Cooper Union Alumni Association award for excellence in civil engineering.
- **1966:** Receives master's degree from Columbia University.
- **1969:** Joins Purdue faculty as assistant professor in School of Aeronautics, Astronautics and Engineering Science.
- **1970:** Receives EScD from Columbia University.
- **1973:** Named assistant professor of mechanical engineering at Purdue.
- **1974:** Promoted to associate professor at Purdue.
- **1980:** Joins Tech faculty as professor in mechanical engineering.
- **1987:** Elected a fellow of the Acoustical Society of America.
- **1989:** Named to George W. Woodruff chair in the School of Mechanical Engineering.



Jerry Ginsberg: Mixing research and teaching to help create "one of the top five ME schools in the world."

levels. An engineer who doesn't expand his base of knowledge is less valuable to an employer."

Ginsberg predicts that some of the curriculum changes could be implemented as early as fall quarter this year, if they are approved.

"It may seem paradoxical to reduce the number of hours when there is so much to learn, but we are trying to focus on the tools, rather than strictly on knowledge content," Ginsberg explains. "We want to expose students to the methods and technologies available and not necessarily make them experts in particular areas as undergraduates."

Ginsberg also plans to encourage cross-disciplinary research in mechanical engineering. "I can think of acoustics problems that require the expertise of people in automatic control. There are solid mechanics problems that might benefit from our experience in nonlinear acoustics. A lot of my research crosses outside the school, particularly with mathematics," he says.

Regarding the current restructur-

ing of Georgia Tech, Ginsberg responds, "The thought of being in a place where we're revising the conventional approach to the way a technological institution is organized is interesting. I support the concept that our students should be well-rounded and aware of the world around them. The degree to which the reorganization will improve facilities and courses is positive.

"A diverse institution also helps recruiting in engineering. If a student is not absolutely committed to carrying out an engineering career, he has options."

Ginsberg left Purdue University to join Tech as a mechanical engineering professor in 1980. Tech met his criteria of a good academic institution, freedom to pursue research goals, and the amenities of a big city.

Tennis is Ginsberg's avocation. He enjoys playing with friends, family and campus colleagues. He lists tinkering with computers and travel as other leisure activities.

Ginsberg and his wife, Rona, have been married for 21 years. They

have two sons: Mitchell, 18, and Danny, 15. Rona manages the *Journal of Operations Research*, which is published from the Tech campus.

During his tenure at Tech, Ginsberg says that Tech's reputation has expanded. "By any measurement, Tech has one of the top five mechanical engineering schools in the country, maybe the world. We have an exceptional faculty which works well as a group.

"United States engineers are as good or better than any in the world," Ginsberg adds. "We need to be more forceful and vocal in our opinions.

"On a national basis, we need people who are looking forward and not wed to old technology. At Tech, we have an excellent student body and faculty whose high level of achievement give us a unique opportunity to provide a cadre of people who are well-equipped for the future." ■

Karen Buttermore is an Atlanta writer and a former editor of the GEORGIA TECH ALUMNI MAGAZINE.

Home Suite Home

... and only
15 minutes
from Tech
as the Yellow
Jacket Flies



At Pickett Suite Hotels, we know how important it is to be able to relax after the Game . . . or after any visit to the Tech Campus.

That's why, as an official sponsor of the *Georgia Tech Alumni Magazine*, we offer Tech graduates and families special rates:

- \$65 weekends
- \$85 weekdays

In every Pickett suite, you'll find a spacious living room with conference and dining area. Plus a separate bedroom and dressing area.

At Pickett, there's room to work, to meet . . . to rest after cheering the Jackets to victory.

For reservations, call direct: 404/956-9999

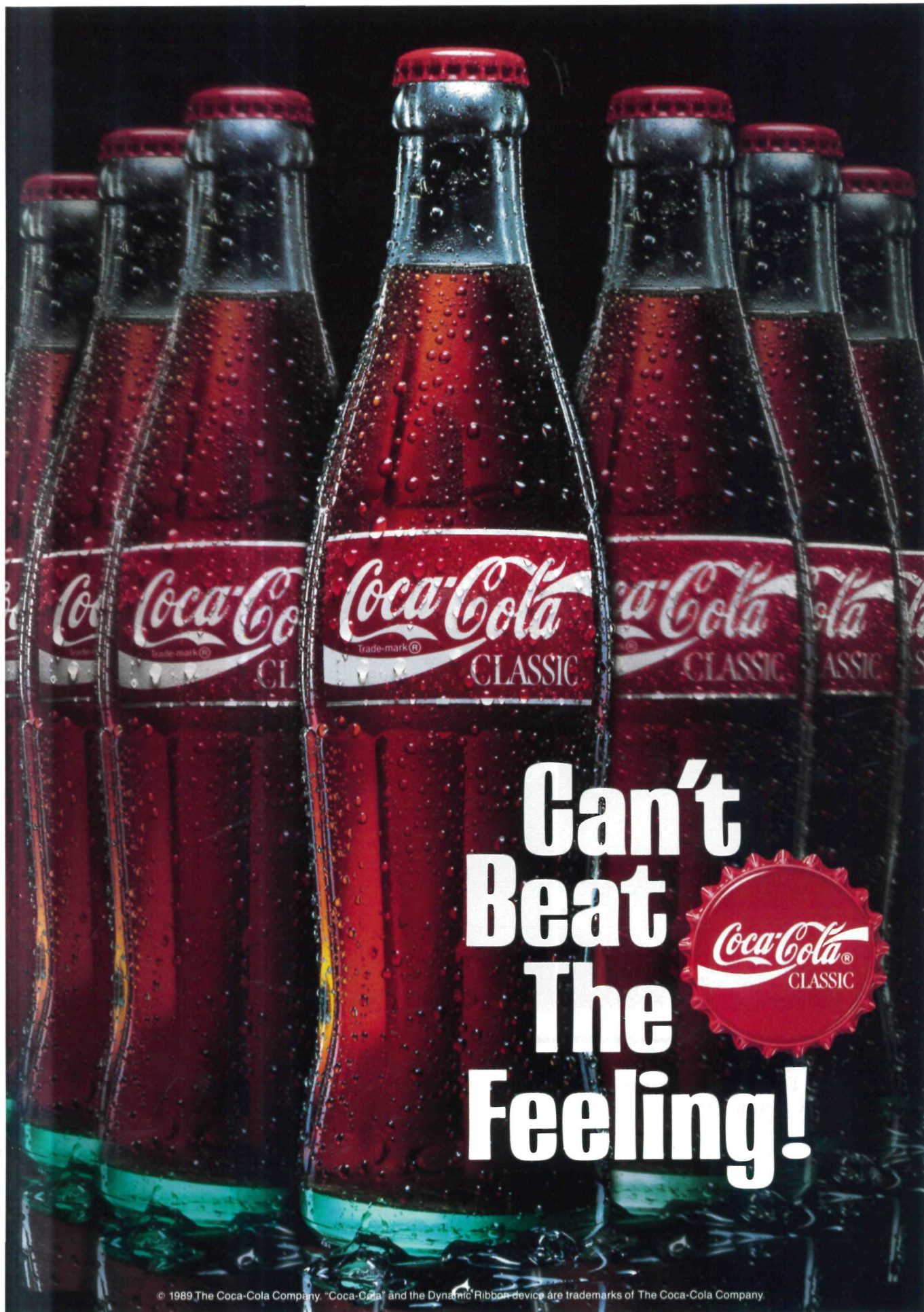
2999 Windy Hill
at Powers Ferry Road
Atlanta, Georgia 30067



Pickett

PICKETT SUITE HOTELS® • RESORTS • INNS

Luxurious suites at room rates



**Can't
Beat
The
Feeling!**



Ramblin' round the world . . .

The 1990 Alumni Tour Schedule

SCANDINAVIAN CAPITALS
Aboard the Crown Odyssey
May 21-June 4

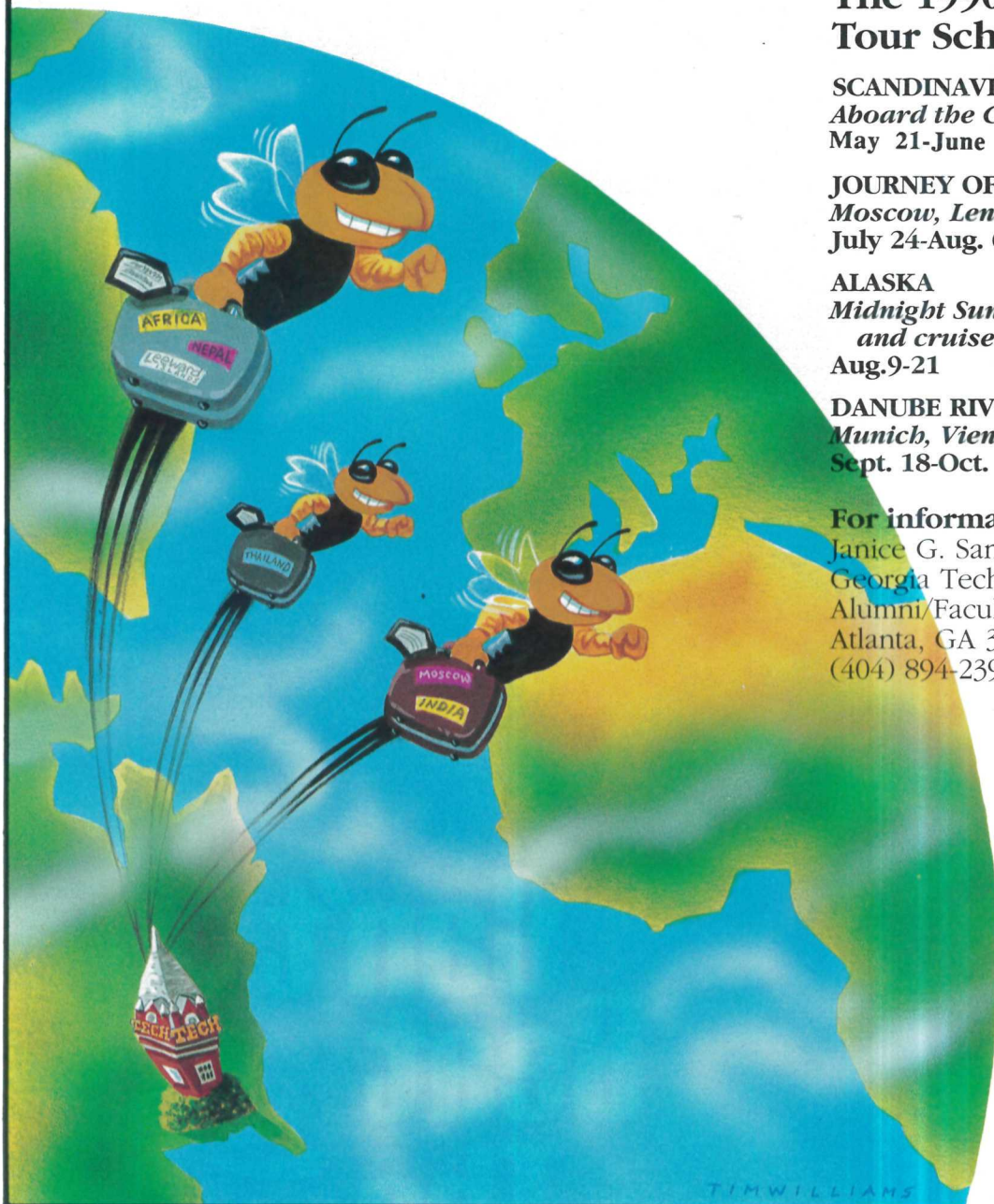
JOURNEY OF THE CZARS
Moscow, Leningrad, Volga River Cruise
July 24-Aug. 6

ALASKA
Midnight Sun Express
and cruise aboard the Sea Princess
Aug. 9-21

DANUBE RIVER CRUISE
Munich, Vienna, Danube River
Sept. 18-Oct. 1

For information contact:

Janice G. Sangster
Georgia Tech Alumni Assn.
Alumni/Faculty House
Atlanta, GA 30332-0175
(404) 894-2391



The Georgia Tech Alumni Magazine
Georgia Tech Alumni Association
Atlanta, Georgia 30332

Non-Profit
Organization
U.S. Postage
PAID
Atlanta, GA
Permit No. 1482