The GTRI Connector

Did You Know:

Greyhounds have the best eyesight of any breed of dog.

Mosquitoes are attracted to the color blue twice as much as to any other color.

Blue eyes are the most senstive to light; dark brown eyes are the least sensitive.
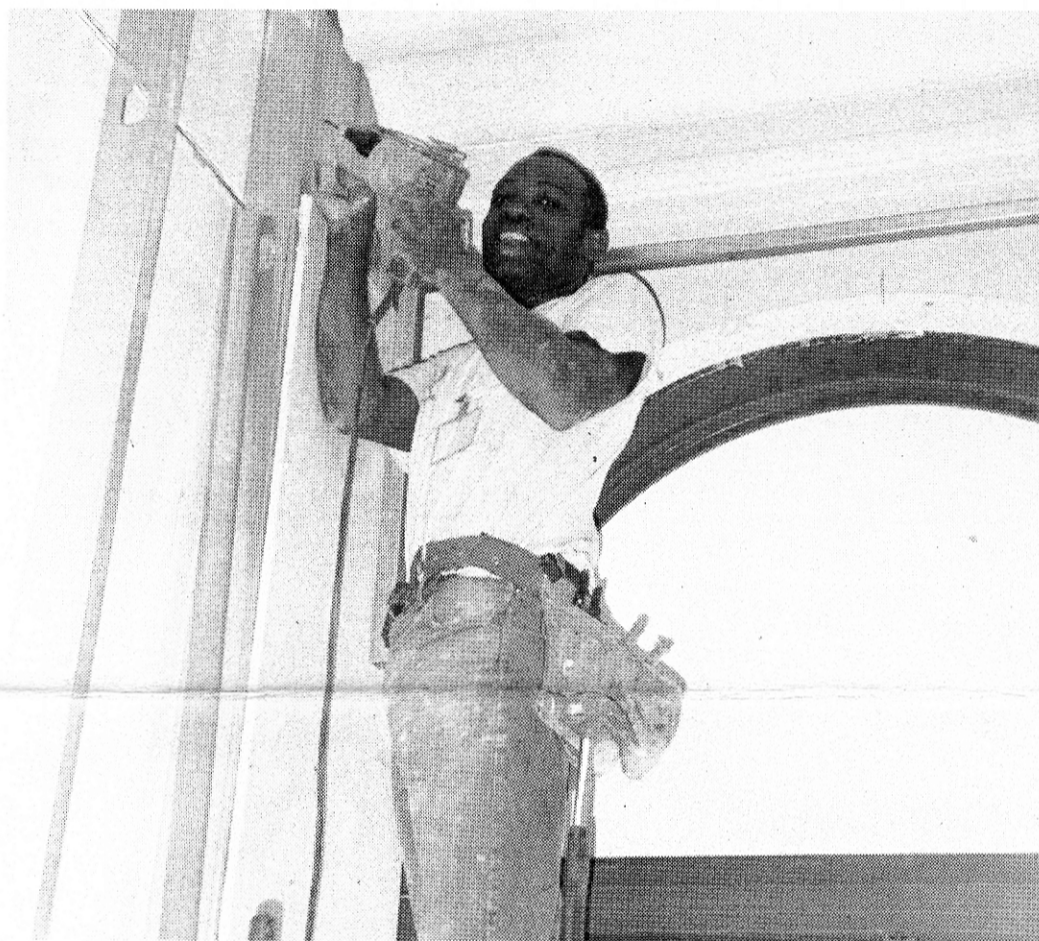
--from *2201 Fascinating Facts* by David Louis

GTRI Records $78.5 Million in Awards During FY 94

FY 94 saw GTRI winning $78.5 million in grants and contracts. Awards for the year fall within the range of FY 93 and FY 92 figures, which were $87.9 million and $75.1 million, respectively. Unlike FY 93, FY 92 and previous years, FY 94 figures do not include Economic Development Lab (EDL) awards — but notably, FY 94 remains within the range of previous years' performances. EDL, formerly a GTRI lab, is now part of the Economic Development Institute and brought in $8.2 million in awards during FY 94.

"Considering the intense competitive national environment, I think FY 94 for both GTRI and EDI was extremely good; combined, these two organizations brought in about 56 percent of the sponsored research at Georgia Tech," Director Richard Truly said. "I am very proud of our researchers' performance for FY 94."

Monthly awards averaged $6.5 million during FY 94. Top months were August, when GTRI brought in $10.2 million, and September, with $12.4 million. This pattern of high awards early on in the fiscal year is consistent with past history, coinciding with the end of the federal government's fiscal year in September. However, GTRI also made a good showing in May, the third best awards month of FY 94, with $9.6 million in awards arriving at GTRI.

Industrial and non-defense expenditures increased by 4.4 percent during FY 94, evidence that GTRI is progressively increasing its non-DoD sponsor base. Overall:

- Industry made up 16.6 percent of GTRI expenditures, up from 15.9 percent in FY 93;
- State and local, 1.5 percent, up from .8 percent;
- Federal non-DoD, 9.6 percent, up from 6.6 percent; and,
- DoD, 70.5 percent, down from 76.7 percent.

Looking to FY 95, initial awards for FY 95 were $5.7 million in July and $6.6 million in August. As THE CONNECTOR went to press, awards for September were projected at $20 million.

Bill Pope of S&D Contracting installs blocking for a cornice molding on the second floor of O'Keefe Building. For a roundup of this and other recent and ongoing renovations in GTRI buildings, turn to page 4. (Photo by Lea McLees)

Observed & Noted

In this issue you can get acquainted with more colleagues in the Research Security Department (RSD). *Turn to page 2 for another installment of RSD profiles.*

Our first employee Olympics question gets answered this month. Sarah Andrews (ELSYS), an Olympics volunteer, provides informative facts, as well. *Read page 3 to become informed.*

Charlotte Batson is in-the-know about late deliverables. *To read about her research findings on this subject, see page 4.*

Have you noticed the sounds of construction and landscaping in your area? *To find out what's up, flip to page 4.*

Some I-75 motorists will benefit from our researchers' work on a fully automated fog detection and warning system. *A description of this project is on page 5.*

New Initiatives groups for FY 95 have begun work. *For a quick overview of what they'll address, look at page 5.*

Georgia Tech research is in the news, from the *Los Angeles Times* to *Business Week.* Highlights are on page 6.

New employee interests range from reading and exploring Atlanta to skiing and floating rivers. *Profiles and photos are on page 7.*

Need something to munch for lunch at Cobb County Research Facility? *Turn to page 7 for a great breakfast and lunch option.*

News & Notes

Ed Gilmore

Phyllis Christopher
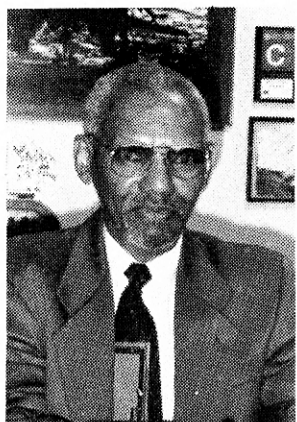
Meet the Research Security Department

Ed Gilmore

Recently celebrated 12 years in RSD at GTRI. As assistant department manager, Gilmore makes sure RSD operates smoothly day-to-day, fills in for Director Bob Lang as needed, and supervises communication, computer and operations security. He enjoys the day-to-day challenges of his job. He also likes working with his super RSD staff and researchers. His goal is to get RSD as automated as possible, and to ensure RSD is people-oriented, putting customer interests first. After work he travels, fishes, cooks gourmet meals (he owns 80 cookbooks) and enjoys his collection of 400 video movies from the 1940s to the present.

Enoch Gamble

Gamble has worked in RSD for almost six years. As administrative coordinator, he manages the physical security of all GTRI buildings on campus. He also initiates and closes out classified contracts, and serves as RSD's computer service representative. His goals are to continue doing a good job for GTRI and to help with overall security planning for the campus in general. After work he is security manager for American Adventures and Whitewater, does supervisory security work for the Marriott Residence Inn, and enjoys golfing.

Phyllis Christopher

A security specialist, Christopher has worked at GTRI in RSD for four years. She handles all classified documents coming in and out of GTRI, as well as secure faxes. Christopher also backs up Rosser Jones in visitor control and Deborah Thomas in the Technical Information Center. Her goal is to get certified as a facility security officer by Defense Investigative Services. She would like to see all RSD security education materials gathered in a security "library" for customers to use. After work she takes piano lessons, jogs, reads and plays tennis and basketball with her 10-year-old daughter. She would like to write film documentaries on notable African-Americans.

White House Science Adviser Gets Science & Technology Update

President Bill Clinton's Assistant for Science and Technology visited Georgia Tech while in Atlanta on August 15.

GTRI was among John Gibbons' stops while in town hearing updates on science and technology.

"I see the role of Georgia Tech and other institutions like it as leading the way in national science and technology strategy and policy," Gibbons said during the briefing. "Georgia Tech is a model of what needs to be done — building partners between government, industry, and our academic institutions. It's a very important national lesson. More of the same is needed."

Director Richard Truly outlined numerous contributions to national defense, while explaining how GTRI converts that technology to commercial uses. Truly noted that in addition to turning defense technologies into commercially viable products, Tech contributes expertise for future national growth.

"The most important contribution we have made is in our thousands of technically expert graduates," he said.

Gibbons was also briefed by Georgia Research Alliance President William Todd, and by Economic Development Institute Director Wayne Hodges. In addition, Tech officials detailed Olympic Progress, distance medicine and learning initiatives, and work using Geographic Information Systems to help survey and rebuild south Georgia after this summer's devastating floods.

Thanks to David Kennedy (Media Relations) for providing this information.

SELECTED JULY 1994 AWARDS

Title	PI/Laboratory	Sponsor	Funded Amount
Urban Transit Hydrogen Demonstration Project	Handley, J. (AERO)	ERDA	$ 199,903
Control of Cavity Oscillations	Ahuja, K. (AERO)	Technology Sci. Serv. Inc.	20,629
Tech. Supp. Svcs. for Pave Low IIE IDAS/MATT Sys. Dev.	Evans, L. (ELSYS)	Loral Electronic Systems	21,238
Electronic Warfare Techniques Analysis	Lilly, L. (ELSYS)	Air Force	299,988
Beta-Alumina Fiber-Matrix Interfacial Coatings	Lackey, W. (EOEML)	Air Force	252,868
Georgia Power Ergonomics Study	Ortiz, D. (EOEML)	Georgia Power Company	20,000
Operational Fog Detection and Warning System	Gimmestad, G. (EOEML)	Georgia Dept. of Transporation	165,400
Dev. of Semicond. Tnlng. Infr. Laser for 4 μm to 15 μm Emission	Torabi, A. (EOEML)	Campbell Scientific Inc.	40,007
Integrat. of Thin Film Mcwv. Devices onto Silicon Circuits	Bohlander, R. (ITL)	Army	140,201
Dev. & Dist. of 2-Way Interactive Broadband Services Using CATV Network	Howard, D. (ITL)	The Sprint Corporation	59,948
Laboratory Infrastructure Analysis & Capabilities Study	Hilderbrand, T. (ITL)	Army	54,004
Radar Simulator, Seeker & Instr. Prog.: Arrowhead Array Ev.	Muzio, A. (SDL)	Army	499,243
AAA/Missile Threat Simulator Units	Toph, E. (SDL)	Army	1,131,390
Radar Simulator Seeker & Instr. Prog.: XM11 Network Mod.	Higgins, J. (SDL)	Army	506,170
XM-43S & XM-15S Program Support	Muzio, A. (SDL)	Army	491,962
Vulnerability Analysis Support to MRC	Daher, J. (SEAL)	Mission Research Corp.	90,000
Thaad EW Susceptibility Analysis	Cochrane, W. (SEAL)	Army	94,283
Radar Support for Ratscat	Lane, T. (SEAL)	EG&G Management Systems	85,822
Broadband Char. of Permittivity & Permeability vs. Temperature	Friederich, P. (STL)	Lockheed Sanders Inc.	55,556
Phase I and II of Fuzing Modeling	Meadows, J. (STL)	U.S. Dept. of Defense	484,584

Countdown to 1996

What will be the boundaries of the Olympic Village, and will any GTRI buildings — Centennial Research Building, Electronics Research Building, Baker Building, O'Keefe Building and Coliseum Annex — be inside them? What will be the effect on employees in these buildings?

The entire campus — 10th Street on the north, Tech Parkway/Northside Drive on the west, the Interstate Connector on the east and North Avenue on the south side — will be inside the Olympic Village. A substantial chain-link security fence will surround the entire area.

However, the Olympic Village will be divided into two zones: the Research Zone and the Village Security Zone (VSZ). The Research Zone will run along 9th and 10th streets, then turn south into the campus to along Atlantic Drive. CRB, ERB, Baker and O'Keefe (among other buildings) will be in the Research Zone, which will require less security clearance than the VSZ.

Coliseum Annex, however, will be in one of two special "Venue Zones." In fact, Alexander Coliseum next door will serve as an on-campus sports venue, hosting boxing events.

Tech employees requiring access to the Village Security Zone or to the Venue Zones will need to be entered in the Olympic security system and receive accreditation badges. Those working in the Research Zone won't need such elaborate ID, though it's not yet clear what will be required. The general public won't be permitted into the Research Zone.

Incidentally, North Avenue between Luckie Street and the Interstate will be closed to traffic during the Olympics, while 10th Street will remain open.

Source: William A. Miller, Director of Olympic Planning

Sarah Andrews (ELSYS) is an active volunteer for the Atlanta Committee for the Olympic Games. She regularly staffs "The Olympic Experience" information center at Underground Atlanta, answering questions about the 1996 games. As a result, she is a great source for Olympics facts and information. Andrews will be providing interesting and informative facts about the Olympics in THE CONNECTOR each month. For example:

•Many countries are bringing their horses to the Southeast at least a year in advance to acclimate them to Georgia's humidity. Because horses lose gallons of body fluid when they sweat, the creation of a fluid-replacement drink for horses — similar to the beverages athletes drink — is being researched.

•Ticket prices for Olympic events range from $6 for some preliminary rounds of baseball to $600 for the best tickets to the opening or closing ceremonies. About 11 million tickets will be sold. Applications for purchasing tickets will be available in 1995, probably in the spring.

•Tickets will be sold first come-first serve, with one exception: If more orders are received for a specific session of an event than there are tickets available, then tickets for that one session may be distributed via lottery.

•Some events are free! To view the marathon, road cycling and race walking competitions, just find out the routes and claim a spot along them – but get a very early start! Plan to spend your time getting to know the people from all over the world who will be waiting with you.

Emeritus Employees Honored

Three former employees who devoted their careers to GTRI were recognized for their contributions by the University System's Board of Regents this month.

Retirees **Billy Livesay** (EOEML) and **Bill Howard** (RSF) were among 14 recently named Georgia Tech "Emeritus" employees recognized with a reception in the Floyd Twin Towers Building. **Bob Shackelford** (RSF) was honored posthumously.

The title "Emeritus" recognizes employees who, at retirement, have 10 or more years of honorable and distinguished service in the University System. It is conferred by the Board of Regents, upon the recommendation of the president at the institution where the employee served.

Livesay, who retired July 1, 1993, was named Principal Research Scientist Emeritus/GTRI on September 9, 1993. He worked at GTRI for 33 years. Howard retired and was named Senior Research Scientist Emeritus/GTRI on November 1, 1993. He worked at GTRI for 27 years. Shackelford was named Associate Director for Research and Principal Research Scientist Emeritus on February 10, 1994. He worked at GTRI for 34 years until he passed away in 1993.

Other Georgia Tech employees honored include:
• **Carl Justus**, Professor Emeritus of Earth and Atmospheric Sciences, effective July 1, 1993, 32 years;
• **Alan Chapman**, Professor Emeritus of Ceramic Engineering and Material Engineering, August 12, 1993, 26 years (posthumous);
• **Douglas "Buddy" Fowlkes**, Assistant Professor Emeritus of Physical Education and Recreation, September 20, 1993, 33 years;
• **Joseph Pentecost**, Professor Emeritus of Ceramic Engineering and Director Emeritus of the School of Ceramic Engineering, August 12, 1993, 20 years (posthumous);
• **Robert Green**, Professor Emeritus of the School of Management, Ivan Allen College of Management, International Affairs and Policy, November 1, 1993, 36 years;
• **Henry Neumann**, Professor Emeritus, School of Chemistry and Biochemistry, College of Sciences, January 1, 1994, 36 years;
• **Eugene Ashby**, Professor Emeritus, School of Chemistry and Biochemistry, College of Sciences, February 9, 1994, 30 years;
• **Nelson Rogers**, Professor Emeritus, School of Industrial and Systems Engineering, College of Engineering, March 1, 1994, 28 years;
• **John Templer**, Regents Professor Emeritus, College of Architecture, October 1, 1994, 18 years;
• **George Miller**, Professor Emeritus, School of Chemistry and Biochemistry, College of Sciences, April 13, 1994, 33 years; and,
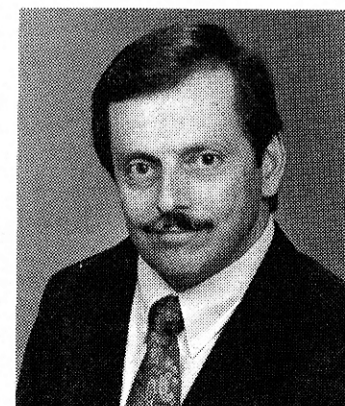• **James Brittain**, Professor Emeritus of History of Technology, July 1, 1994, 24 years.
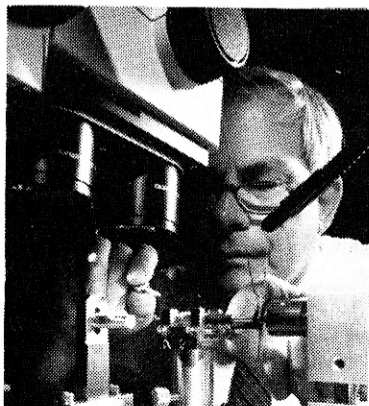
Billy Livesay

Bill Howard

Bob Shackelford

GTRI Renovations Heading Toward Completion

The sounds of research in progress have been joined by a symphony of pounding hammers and buzzing saws in GTRI labs and buildings this summer. Several renovations and proactive improvement projects are in progress, funded from various sources. Following is a summary of what's up where and why.

WESCO: GTRI is using half of this warehouse, bought by Georgia Tech, for the Undersea Research Program Office. The necessary renovations were contracted out to J.R. Bowman. The building gets a new fence, a conference room, offices, and accessibility for disabled persons, among other improvements. Work began in June and should be completed by the end of September, says Harry Vann (SSD).

O'Keefe: About 3,200 square feet in the south wing of O'Keefe — the site of an auditorium in its younger days — is being converted into office space for GTRI service groups. Additional space is being renovated in O'Keefe for Economic Development Institute (EDI) use. A large open space is being converted to a mix of private and open offices, Vann said.

"We are attempting to preserve some of the architectural character of the space, such as crown moldings and high ceilings, and have a high tech look — exposed utilities and special lighting fixtures," he said.

The work was contracted out to S&D Contracting. Work began in late July and completion is expected in October, Vann says.

CCRF Building Two Atrium: The Facilities Services Team (FST) recently finished renovating this large space so it could be used by the AERO lab. Offices for permanent staff surround the perimeter, and student cubicles fill the center of the atrium.

Specified EOEML AND ITL Labs: Several labs in the Baker Building and one in ITL have been renovated by SSD and outside contractors to meet requirements for sponsored research projects led by Bobby Wilson (ITL) and EOEML's Allen Garrison, Bob Schwerzel, Chris Summers and Mario Occelli. SSD expanded Room 135 to house equipment — that room will eventually become a clean room. Other highlights include new fume hoods in Rooms 136 and 209, and cabinets and chemical-resistant epoxy coatings on floors /ceilings in 209, Vann said.

Research to be done in the labs includes, but is not limited to, electro-optical measurements; advanced photonic materials; developing improved materials for integrated optical sensors; and work associated with the Phosphor Technology Center, housed in GTRI. This work was supervised by Vann and Carl Baxter.

Proactive Improvements: Within the last year SSD employees have inspected buildings and developed a list of facilities improvements needed in GTRI buildings. Among the projects included are replacing damaged ceiling and floor tiles as needed, repairing unstable bathroom partitions, and putting protective railings around the roofs of GTRI buildings on which research is conducted.

Landscaping at CCRF: Significant aesthetic improvements were made at Cobb County last year with assistance from POD employees. Among the improvements were renovating and transplanting outdoor landscaping as needed, removing dead trees, pruning bushes, cleaning out undergrowth, and fertilizing and spraying plants, said Georgia Tech horticulturist Donna Chronic (POD). Flowers and pine straw were also added to the CCRF landscape. The improvements are easy to maintain, Chronic said, and are now overseen by a contractor.

Thanks to Evan Chastain and the SSD folks mentioned above for their help on this article!

These MAPS employees organized an ongoing effort among their fellow employees to provide meals for the Ronald McDonald House. The house is a "home away from home" for families with children being treated at nearby Atlanta hospitals such as Emory and Scottish Rite Medical Center. Left to right are Mary Redish, Sharon Mattson, Gail Woodward, Cynthia Rogers, and Debbie Winn. (Photo by Lea McLees)

Deliverables: What is Late and What Isn't? Batson Asks Researchers, Sponsors, OCA

True rewards of scientific research are often based on unexpected findings which lead researchers to new and interesting paths of thought. Charlotte Batson of the GTRI Management and Project Support (MAPS) group found this to be true of her recently completed study of research deliverables at Georgia Tech.

The project was funded through the research initiation/matching program sponsored by IBM's Total Quality Management grant to Georgia Tech through GTRI. The IBM funds are part of a five-year grant awarded to Tech in October 1992 to help establish Continuous Quality Improvement (CQI) in curriculum, operations and research. CQI, a term Tech uses to denote TQM activities, is a management philosophy and approach for continuously improving the quality of goods and services an organization provides.

In this project, Batson and colleagues originally planned to identify factors contributing to the lateness of contract deliverables. Their primary objective was to develop a mathematical model quantifying the losses to sponsors and Georgia Tech resulting from missed due dates.

She first studied GTRI's approximately 3,500 deliverables for FY 92 and found that half the reports had mail dates in the database that were on or before their due dates. She then selected College of Engineering deliverables to the National Science Foundation (NSF) for preliminary statistical analysis. The less varied report types, combined with only one sponsor, would eliminate some possible sources of variation and provide a means of estimating the effects of other factors, such as project duration, contract value, and number of reports, on lateness. A sig-

nificant finding in both cases was that the model explained only 2.3 percent of the total variation. Based on the analytical results obtained, a more fundamental question arose: How is lateness defined, and possibly caused, by the existing system?

Batson then posed this question: What is the existing communication system between participants in the research process? To find an answer to this question, a survey was developed which included two main question categories: defining relationships and defining performance. A total of 21 Tech researchers, seven contracting officers from OCA Program Administration Division, 25 sponsor contracting officers, and 25 sponsor technical monitors were surveyed, with the following findings:

• The peak of the distribution of the existing measurement system is almost exactly at the due date of the deliverable items, and 75 percent of sponsors indicated that a delay of a month or more would cause dissatisfaction. Approximately 16 percent of deliverables would cause dissatisfaction, based on this criterion.

• Sponsors indicated that their customer satisfaction may be more directly related to the quality of the deliverable than to timeliness, and may be independent of this measurement.

• There may be misconceptions at Georgia Tech about customer needs of current sponsors, and no knowledge at all of the sponsoring agencies that go elsewhere for research.

• A lot of information is being exchanged outside the administrative process, e.g. between the researcher and the technical monitor. If captured, this information would help meet the needs of the researchers and OCA. This information flow is independent of the flow of deliverables.

• Despite wide variation among priorities and types of deliverables measured, current reports of overdue deliverables treat them identically. The loss function is likely priority dependent.

For additional information, you may call Charlotte Batson at 853-4199 or send e-mail to charlotte.batson@gtri.gatech.edu.
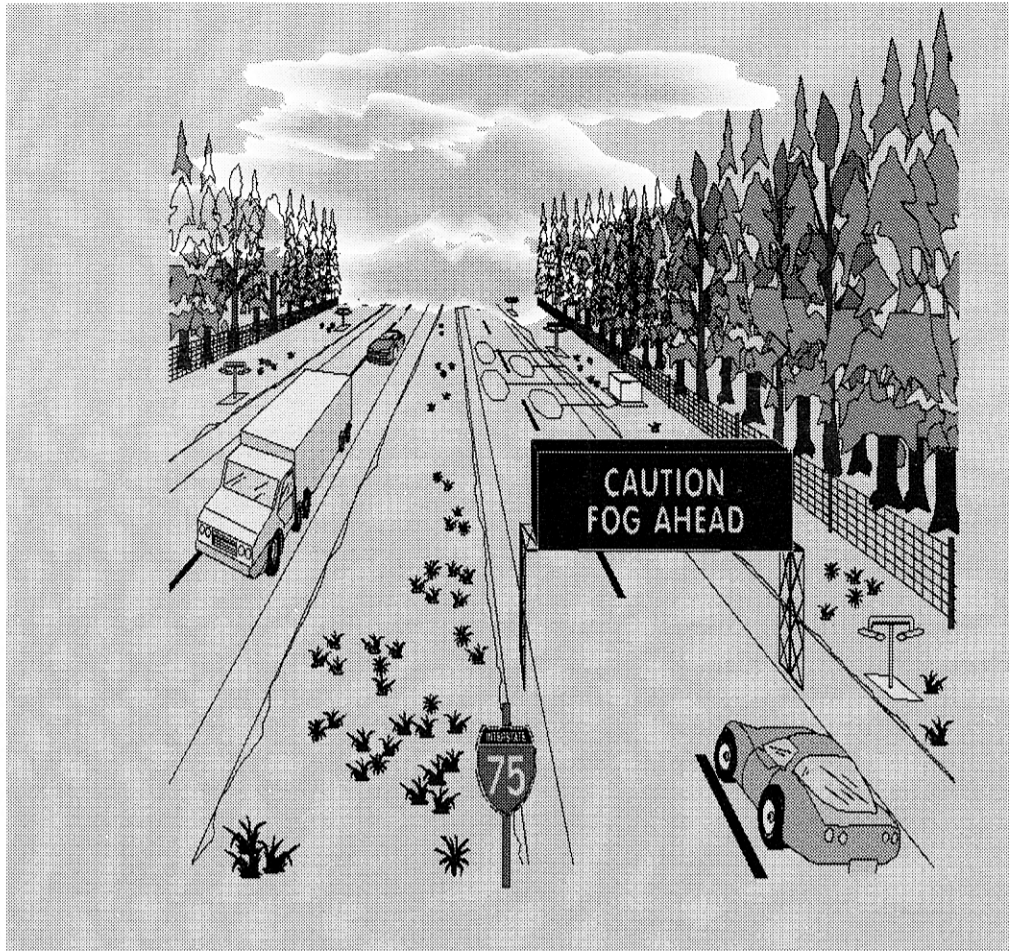
Fully Automated Fog Detection & Warning System to Improve Safety on I-75

By John Toon, RCT

A fully automated fog detection and warning system will soon be improving motorists' safety on a heavily traveled portion of Interstate 75 in south Georgia.

Developed jointly by the Georgia Department of Transportation and GTRI, the system could be a prototype for automated visibility monitoring programs in other states where fog, snow or dust pose hazards for drivers.

Using a network of 19 fog sensors, five sets of traffic speed monitoring loops, several weather instruments and an on-site central computer, the system will continuously monitor visibility in an area south of Adel where dense fog is known to develop, and will control four variable message signs along a 12-mile section of highway.

"The key issue here is safety," said Gary Gimmestad (EOEML). "The system will be monitoring that area at all times, watching for the development of fog."

When the system detects a visibility problem, it will automatically notify authorities by telephone and post information on variable message signs 36 feet wide and nine feet high built over the traffic lanes. The LED-type signs will warn motorists of the specific fog hazard, call for reduced traffic speeds where appropriate, and provide detour information if conditions warrant closing the highway.

A dial-up system will provide law enforcement and highway officials with remote access to visibility information the system gathers. Using computer terminals, officials off-site will be able to monitor visibility levels, traffic speeds and weather readings to help assess hazardous conditions.

The message signs will be changed automatically by the system or on-site by an official. The dial-up system will also allow authorities to verify the proper operation of the system from their remote terminals.

With funding for a study from the Federal Highway Administration and a full system from the Georgia DOT, the system will be built in three phases starting this fall. It initially includes the sensors, computer and one sign over the southbound lanes. Ultimately, four variable message signs will provide information about road conditions for both northbound and southbound drivers, Gimmestad said.

The fog warning system will use commercially available optical fog sensors. Each sensor consists of a light source and a receiver aimed nearly at each other, but off the line of sight at a small angle. In good visibility conditions, the source's beam of light will miss the receiver. But fog particles will scatter the beam, causing light to enter the receiver.

"The receiver measures the amount of transmitted light scattered by the particles in the fog," Gimmestad explained. "The denser the fog, the more light will be scattered and measured by the receiver."

The study phase of the project began last fall when traffic loops, weather instruments and two visibility sensors were installed near the center of the fog area, with a computer to record data continuously. The data is transferred to Georgia Tech daily by telephone line. This system also provides dial-up access for remote terminals so researchers can connect to it to obtain current conditions at the site or to check the system status.

In addition, arrays of visibility targets have been installed at the site so deputies from the local sheriff's office can make visual observations during fog episodes, for comparison with the sensor readings. Two types of targets were installed for both daytime and nighttime light levels. The deputies also record fog conditions as they drive along I-75.

The study phase of the project is expected to provide basic information including how often fog develops at the site, the severity of visibility problems it causes, and how widespread it becomes. The study also will measure traffic speeds in various fog conditions and compare visibility sensor readings with human observations. All this information will be used in designing the operational system.

'New Initiatives' Aim to Build on FY 94 Success

by Rick Robinson, RCT

GTRI's New Initiatives strategy, just a year old, is a definite success thus far. The Advanced Concepts Office (ACO) reports that the six New Initiative groups selected for FY 94 received $275,000 in GTRI seed money and went on to garner $4.9 million in new government and industry contracts — a nearly 18-to-1 return ratio.

"That's an unexpectedly high return for the first year," said Jim Cofer, who as ACO director oversees the effort. Eight New Initiative areas have been identified for FY 95.

A New Initiative, also known as a "thrust area," is a field that offers particular contract-development opportunity for Georgia Tech researchers because of increasing government/industry interest coupled with Tech core capability.

Currently, thrust areas are chosen by GTRI Director Richard Truly and other GTRI executives with specific recommendations from the ACO and the Program Development Office. Initiative Groups are then set up that extend across laboratory lines and include GTRI and non-GTRI members. The groups meet regularly and receive GTRI seed money to help them pursue outside contracts.

The process for selecting New Initiatives may soon receive some refinement. "My goal for FY 96 is to have a more disciplined approach to choosing topics, which will include more participation by lab directors and the Fellows Council," he said.

For FY 95, Cofer said, the eight Initiative Groups are:

• Medical Technology, led by William Holm, seeks to focus GTRI's DoD strengths on a limited number of medical technology areas. Research initiatives cover Diagnostic Signal Processing for MRI Images, Computer Assisted Diagnosis for Digital Mammograms, 3-D Facial Animation Analysis, Effective Human/Machine Interface, Portable Smart MRI System, RF Hazards in Intelligent Vehicle Highway Systems, and RF Hazards in Cellular and Personal Communications Systems.

• Advanced Transportation, led by Robert Cassanova, already has a strong list of contracts including Human Factors in Advanced Traffic Management System Design, Automated Highway System, Advanced Traveler Information System, En Route Traveler Advisory System and the ISTEA Management Plan. The group is pursuing other work such as sensors that detect damaged bridges and unmanned aerial vehicle surveillance drones for assessing traffic conditions.

• Educational Technology, led by Laurie Hodges, aims to use GTRI expertise to aid Georgia schools with networking tasks as state lottery money brings more technology into the

Installation of sensors for the operational system is expected to begin this fall, and system development will continue over a three-year period ending in early 1997. Researchers working on this project include Gimmestad, EOEML's Ed Patterson, Wayne Daley and Richard Carey; Bruce Harvey (ITL), Mike Kelly (ELSYS) and Pete Parsonson (Civil Engineering); and two Civil Engineering graduate students, Dan Sanders and Felipe Luyanda-Andino.

A network of fog sensors, traffic speed monitoring loops, weather instruments and an on-site computer will make up a fully automated fog detection and warning system on I-75 south of Adel, Ga. (Artwork by Sheree Collins)

News & Notes

Charitable Campaign: "Even A Little Means A Lot"

From Sonny Fletcher, RSD

It is time once again for the Georgia Tech Charitable Campaign. With your help, this year's campaign will be a big success. What makes a successful campaign is people caring enough to get involved.

The United Way goal for the State of Georgia is $2 million. Georgia Tech's goal is $187,000.

Since September is kick-off presentation month, I am asking all faculty and staff to begin thinking about donating to the charitable campaign. This will give you time to look at your finances and into your heart. In October, please make your pledge and return the card to your unit coordinator. If every employee pledged $2 per pay period, we could meet these goals.

You have many choices in designating your pledge. You can give to the local United Way Agency, a specific agency, or 38 different ones. A total of 27 independent organizations provide health and human services, and three federated organizations represent a variety of statewide and local charitable agencies.

This year a special category has been added: flood relief. South Georgians devastated by this summer's floods need help obtaining basic necessities such as food, shelter and clothing. United Way helps meet those needs.

The theme for the 1994-95 campaign is "Even A Little Means A Lot." These words are important. Even if 52 people gave $1 per pay period, we would have $52 per pay period and that is a nice amount of money. So yes, even a little means a lot.

If you have any questions about the charitable campaign, you may call:

• Campaign chairperson Carolyn Meyers, associate professor and Foundry Educational Foundation Professor, 894-3264, mail code 0405 (Mechanical Engineering):

• Campaign coordinator Kathy Earwood, administrative assistant in Landscape Services, 894-3969, mail code 0350;

• Steering committee member Bob Lang (RSD), 894-4822;

• or myself, Sonny Fletcher, at 894-4822/ 9681.

Electronics technician Gary Reed is remembered for his meticulous fabrication of electronic equipment, dedication to work and colleagues, his kindness and a wonderful sense of fun and adventure. (Photo Courtesy Greg Wright)

Memorial Fund Set Up in Honor of Gary Reed

The parents of Electronics Technician Gary Reed (ELSYS), a GTRI employee who died June 15 of cancer, have set up a memorial fund in his name.

Gifts to the fund will be distributed among the many agencies and organizations that helped Gary while he was ill, said Lee Edwards (ELSYS).

Gary worked at GTRI for 11 years, meticulously fabricating electronic equipment such as circuit cards, assemblies and chassis for sponsored projects. He left a legacy of well-trained students he taught to do similar work, Edwards said.

Gary is remembered by Greg Wright (ELSYS) as a dedicated person who often worked late and on weekends, going far beyond the call of duty. Noted Lee Evans (ELSYS): "Gary could be depended on to complete the task and get everything right the first time. He was a real resource on how to get things done at GTRI."

He also was very familiar with military requirements and how to procure military qualified parts, Edwards said.

"This capability was very helpful to us, with all the military work we do," he explained.

Wright remembers Gary as one of the "kindest, gentlest, most caring people" people he has ever known. "Gary also loved to have fun," Wright recalled. "He took scuba diving lessons and a juggling class, and was always planning a trip somewhere. "

Gary had completed about three-fourths of his work toward a bachelor's degree in electrical and computer engineering technology at the Southern College of Technology in Marietta. After work, he enjoyed spending time with his family, friends and two cats. As building manager for his condominium association, Gary was instrumental in improving facilities and grounds. He also worked on weekends at Huey's on Peachtree Street for several years.

If you would like to contribute to the Gary Reed Memorial Fund, you may send gifts to this address near his hometown:

The Gary Reed Memorial Fund
Celco Federal Credit Union
P.O. Box 361
Narrows, Va. 24124
Attn.: Debbie Huffman

Research In The News

During July, articles describing Georgia Tech research appeared in 41 publications with a combined circulation of 8.5 million. Key articles, and the circulation of the publications in which they appeared, are shown below:

• *The Los Angeles Times* (circ. 1.4 million) included the **Intelligent Integrated Belt Manipulator** in a column about technology developments. The system, under development by Gary McMurray and others in EOEML, offers manufacturers a low-cost method for removing items from a conveyor belt.

• *Business Week* (circ. 975,000) carried an article on the **carbon-carbon fabrication** process being developed under Air Force sponsorship by Jack Lackey and others, also in EOEML.

• *The New York Times Magazine* (circ. 1.6 million) described Georgia Tech work on making **paper from kudzu vines**. The research is being done by Jeffery Hsieh (Chemical Engineering).

• The British science journal *New Scientist* and the Washington, D.C. newspaper *Washington Technology* (circ. 39,000) described **radio telescope capabilities** at the Woodbury Research Facility operated by the Georgia Tech Research Corporation. The facility was mentioned for its monitoring of the Shoemaker-Levy 9 Comet as it struck Jupiter. Paul Steffes and William Smith (Electrical and Computer Engineering) are operating the radio telescope.

• Three publications — *The Orange County Register* (circ. 332,000), *Compute Magazine* (circ. 275,044) and *Personal Engineering and Instrumentation* (circ. 51,000) — described work on using **neural networks to predict future behavior** based on extensive records of past performance. The work was done by Jim Mahaffey (ITL) and Darrell Acree (SEAL).

• In an article on the future **miniaturization of electronic components**, *Scientific American* (circ. 600,000), quoted James Meindl (Electrical and Computer Engineering).

• *Defense & Aerospace Electronics* (circ. 46,000), *C3I News*, and *Electronic Warfare* described work done on **FalconView** mission planning software by John Pyles and others in ITL.

• Articles about research on the **effects of electromagnetic interference** on multichip modules appeared in *Aerospace Engineering* (circ. 42,809), *Electronic Engineering Product News* (circ. 102,910) and *Journal of Metals* (circ. 14,000). The work was done by John Rohrbaugh and others in SEAL.

• *Communications of the ACM* (circ. 83,026), *Microwaves & RF* (circ. 62,118) and *Advanced Materials* (circ. 5,000) continued the extensive coverage of the **"Window Curtain"** flat panel antenna developed by Ed Joy and others in Electrical and Computer Engineering.

• *What's Happening in Chemistry*, an annual report distributed by the American Chemical Society, devoted three pages to describing the work of Mario Occelli (EOEML) on the surface characteristics of **petroleum cracking catalysts**.

• *The Atlanta Journal-Constitution* (circ. 505,000) described the **TKMOD5C** radar software being licensed by Georgia Tech. The project was headed by J.A. Saffold (SEAL).

Cathy Clark **Ashley Carroll** **Brian Guntherberg**

GTRI Greetings

Welcome to some of our newest employees!

Ten Good Things We Know About Cathy Clark

1. Cathy is a safety consultant in EOEML's Safety, Health and Ergonomics Branch.

2. She comes to GTRI with six years experience in the safety, health and environmental field. Cathy has worked in the chemical and transportation industries.

3. Most recently, Cathy was employed by Federal Express as a Safety Specialist, responsible for Occupational Safety and Health Administration (OSHA), Environmental Protection Agency and Department of Transportation compliance.

4. She holds a bachelor's degree in chemistry from the University of Tennessee/Chattanooga, and completed her master's in textile and polymer chemistry at Georgia Tech.

5. Cathy's primary job is to provide technical and compliance assistance in occupational safety for businesses throughout Georgia.

6. She also will provide training as part of continuing education courses and OSHA Training Institute courses.

7. Cathy enjoys her work because it offers exposure to different manufacturing operations.

8. She is originally from Chattanooga, Tenn., but has lived in the Atlanta area since 1985.

9. After work, Cathy enjoys outdoor activities, particularly boating and fishing.

10. She likes to read, as well, and is currently reading Alan Shepard's *Moon Shot.*

Ten Good Things We Know About Ashley Carroll

1. Ashley began work August 11 as a student assistant in ITL.

2. She also recently finished her first quarter of school at Georgia Tech.

3. Ashley's job includes answering phones, ordering supplies, faxing and other duties.

4. She enjoys working at GTRI because everyone is very nice, and because she can have a flexible schedule that allows her to go to school.

5. Ashley is from Camden, Ala. Her high school graduated 26 seniors that year.

6. Ashley must've been the brightest in her class — while most of her classmates went to Auburn, she chose Georgia Tech.

7. She is studying to be a mechanical engineer.

8. Ashley chose mechanical engineering because she likes gears, heat transfer, and knowing how things work.

9. She always has been the person who fixes things that come apart or don't work around her house.

10. She spends much of her time in class, studying or at work, but when she has a break, Ashley likes to explore Atlanta.

Ten Good Things We Know About Brian Guntherberg

1. Brian began work April 18 at HRO — he is a systems analyst.

2. He is originally from Elora, Tenn.

3. Brian's main responsibility at HRO is developing C++ software.

4. Before coming to HRO he worked at Optimization Technology, Inc. (OTI).

5. At OTI, he wrote a graphics interface for a network simulation.

6. Brian likes being at GTRI because his work here is interesting.

7. His main goal is to provide services to the customer that generate a positive attitude toward GTRI and its employees.

8. Brian likes to watch Southeastern Conference college football.

9. He also enjoys driving on country roads, skiing in Colorado and visiting Caribbean beaches.

10. When he is not at work you might find Brian working in his yard, grilling out, or floating the rivers near his home.

Fellows Want Your Input

The GTRI Fellows Council was formed in 1993, partly to provide recommendations to the GTRI director from the research community without passing through the management chain. Continued comments and specific suggestions for improving the research enterprise at GTRI are invited. You may contact Krish Ahuja (AERO) 528-7054, Larry Corey (SEAL) 528-7156, D.C. Flowers (ELSYS) 894-7195, Bill Rhodes (EOEML) 894-2929, or Chris Summers (EOEML) 894-3420.

The Whistle Has Returned!

You've probably noticed an old friend appearing in your mailbox each week — Georgia Tech's campus newsletter, *The Whistle*, is back! It is published each Thursday fall through spring quarters, and biweekly during summer quarter.

The deadline for submitting calendar listings, free classified ads and "People in the News" items is the Thursday preceding the publication date.

If you need more information or would like to submit items, you may call editor Sallylyn Hogsed at 894-8699; send e-mail to sallylyn.hogsed@vpea.gatech.edu; fax to 853-9187; or send campus mail to Hogsed at Media Relations/VPEA/0181.

Food for CCRF's Folks on the Go

By Lea McLees, RCT

It's noon at the Cobb County Research Facility (CCRF) — do you know where your lunch is?

Gary Owens of Owens' Distinctive Catering does — your lunch is in the Building One cafeteria. He has provided breakfasts and lunches for hungry CCRF employees since May.

"We have a regular menu, along with a daily lunch special," Owens said. "The special is always a full meal, such as baked chicken, blended rice, broccoli and tea, for $5."

Owens, a member of the American Culinary Federation, has made a lifelong career in food service. A second-generation chef, he began training in high school and later attended the Jacksonville, Fla. Junior College for Food Service Technology. He also served in the Navy and Coast Guard and was a chief steward in the Merchant Marines — he has circled the globe five or six times.

Among his culinary achievements are providing food for a gala and reception for Douglas Wilder upon his election as Virginia's governor in 1990; running his own restaurant, Wagner's Village Cafe, in Virginia; and being production chef at North Carolina State when that school's food service personnel won the 1988 IVY Award, a prestigious culinary honor.

"I like being very creative," Owens said. "It makes me happy to see people smile when they eat a meal and tell me it was great."

He also ran the dining facility at Ft. Dix, N.J. from 1984 to 1986, supervising 20 cooks who fed 3,000 people three times a day; and was food and beverage manager at Dobbins Air Force Base in 1992. Owens once prepared a two-day company picnic for Scott Paper in Pennsylvania, serving 4,000 employees in two days. He has catered meals for several companies and for GTRI short courses, as well.

"I couldn't ask for nicer people to work for," he said of CCRF employees.

Lisa McDonald (MAPS) likes the convenience of the CCRF cafeteria. She really enjoys Owens' stir fry. "The food is good, and Gary is pleasant and friendly," she said.

Chuck Stancil (AERO) likes the vegetable lasagna best. "The food is always good, the portions are big, and the service is prompt and cordial," he said.

The breakfast menu at CCRF includes hot cakes, eggs, French toast, cereal, muffins and pastries, meats, hash browns, biscuits, juices, coffee and other items. Lunch offerings include sandwiches, salads, soups, desserts and drinks, in addition to the daily special. Food can be eaten in the cafeteria or ordered to go.

Owens' goal is to cater for events during the 1996 Olympics.

Owens provides meals at CCRF cafeteria Monday through Friday — breakfast is served 7-9:30 a.m., and lunch is served 11 a.m.-2 p.m. For more information or to find out the day's lunch special, you may call 528-7033.

Focus on Folks

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Focus on Folks

This publication is printed in part on recycled paper.

Professional Activities

Aerospace Sciences Laboratory

Krish Ahuja gave an invited talk, "In Search of Supersonic Jet Noise Suppressors," at the 12th U.S. Congress of Applied Mechanics in Seattle, Wash., June 26-July 1. This summer he taught AE 6250, "Rocket Propulsion," in the School of Aerospace Engineering.

Preston Bates' photo and a mention of GTRI appeared in the August issue of the U.S. Air Force Materiel Command's *Leading Edge* magazine. The photo was taken at the Air Force's Aging Aircraft Conference at Tinker Air Force Base, Okla., May 17-19. Bates participated in the Aging Aircraft Steering Group meetings for Structural Integrity Assessment at the conference. He advocated research on aging helicopters in support of GTRI's aircraft structural integrity work for Warner Robins Air Logistics Center.

Electronic Systems Laboratory

Mike Kelly and **Jeff Gerth** attended the triennial meeting of the International Ergonomics Association in Toronto in mid-August. Kelly presented "A Traffic Management Simulator for Human Factors Research." Gerth presented "Comparing Advanced Traffic Management Centers with Similar Operation Control Systems. Debbie Mitta co-authored another presented paper, "The Utility of Task-Action Grammar as an Interface Evaluation Tool."

Electro-optics, Environment and Materials Laboratory

Jim Beletic traveled to National Science Foundation headquarters September 15 and 23 to participate in two review panels: one for instrumentation and one for focal plane arrays. Beletic and colleagues at the University of Arizona and the University of Chicago just had a paper on "Adaptive Optics Experiments Using Sodium Laser Guide Stars" accepted for publication in *Astrophysical Journal.*

Bob Schwerzel attended the ACS/OSA Symposium on Polymeric Thin Films for Photonic Applications at the fall national meeting of the American Chemical Society in Washington, D.C., August 20-24. He presented "Langmuir-Blodgett Films of Cadmium Sulfide Nanoparticles in Polydiacetylene: The First Example of a Composite 'Nonlinear-Nonlinear' Optical Material'."

Chris Summers gave an invited seminar at Humbolt University in Berlin, Germany on "Metalorganic Molecular Beam Epitaxial Growth and Properties of II-VI Semiconductors" on June 26.

The Phosphor Technology Center of Excellence hosted participating researchers from universities, national laboratories and industry July 6-8. They attended a review of new phosphor developments for electroluminescent, field emission, cathode ray and plasma flat panel displays. The meeting was organized by **Chris Summers**, **Stuart Jacobsen** and **Brent Wagner**. Other Tech participants were

GTRI's **Wu-Sheng Tong**, **Jack Lackey** and **Wayne Ohlinger**, and **Ahmet Erbil** (Physics).

Sensors and Electromagnetic Applications Laboratory

Neal Alexander presented "Battlefield Identification System Environment and Performance Simulator (BISEPS)" at the Combat Identification Systems Conference (CISC-94) in Monterey, Calif., Aug. 4-6. Co-authors were **Jay Saffold** (SEAL), **Scott Bostater** (SEAL), **Margaret Horst** (STL), **Bill Vander Meer** (SEAL), and **Larry Stein** (U.S. Army CECOM NVES).

Rick Levin presented "System Considerations of Re-engineered Electronic Components" at the Diminishing Manufacturing Sources and Material Shortages Conference in Jupiter Beach, Fla., August 8-11.

Systems Development Laboratory

Austin Blochenberger has been working with representatives of Symantec's Time Line project management software division over the past four years. Symantec has included some of Blochberger's recommended enhancements in its Time Line software. Ray Coker, a representative for Symantec, recognized Blochberger for his assistance by having his name included in the "Staff List" in Appendix D-33 of the Time Line for Windows (Version 6.0) *User's Guide and Reference* manual.

VPDir and ACO

During the week of August 29, Richard Truly and Jim Cofer presented invited papers to the Second Annual ITEA Test Technology Transfer Symposium in Newport, R.I. Truly's keynote address discussed "T&E Lessons from the U.S. Space Experience." Cofer was a panelist and presented "Case Studies: Dual-Use Programs at Georgia Tech."

Personnel News

New Hires

PDO welcome Administrative Secretary **Kimberly Kimmel.**
The Arlington Office welcomes **Ellen Kennedy** as Administrative Assistant II.
STL welcomes Office Automation Specialist **Wade Walker**.
AERO welcomes **Jeff Hsu** as an REI.

Transfers

Mark Hodges, RA II, has transferred from RCT to EOEML.
Cheri Wiesman, Senior Secretary, has transferred from ELSYS to PDO.

Retirees

Ann Evans (ITL) retired on September 30.

Terminations

These employees have terminated:
Barbara Essinger (ELSYS), Clerk IV;
Stephen Hubbard (ELSYS), RE II;
Annette Hurley (EOEML), RA II;
Michael Walker (ITL), RE II; and,
Connie Bragg (STL), Secretary.

Personal Notes

Wedding Bells

Regina Hardin (EOEML) married Scott Richards on August 27.

Our Sympathy

...to **Bill Youngblood** (AERO), whose mother, Bonnie, died August 9 after an extended illness.

ACO

classroom. In addition, the Multimedia in Manufacturing Education (MIME) project is developing courseware, while Project TEAMS — Technology Enabled Advances In Multi-networked Schools — is pursuing contracts to develop Internet-style services for teachers, administrators, students and their families.

• Georgia Emerging Industries, led by Richard Combes, has the job of identifying three to five new business sectors that could bolster the Georgia economy beyond the next decade. The group will look at previous assessments, develop a list of potential business sectors and conduct forums to select the most promising.

• Security and Law Enforcement Technology, led by Tom Horton, is a new group focusing on the important area spotlighted recently by the federal anti-crime bill. GTRI has extensive experience in assisting regional law enforcement groups by providing technical tools to aid coordination of their efforts. Horton reports that a number of Tech DoD projects are strong candidates for technology transfer to the law enforcement arena, including image enhancement and sensor technology.

• Defense Conversion, led by Cofer, is an ongoing campus-wide effort taking people and methodologies from the defense world and applying them to dual and non-defense uses. It targets such federal programs as the Technology Reinvestment Project (TRP) funded by ARPA and the Advanced Technology Program (ATP) sponsored by NIST. Moreover, Cofer notes, this year will see new initiatives from various other federal agencies in such fields as electronic packaging, transportation, manufacturing and flat-panel displays.

• International Defense Conversion, led by Martha Willis, will work through the Center for International Defense Conversion currently being established by GTRI. As worldwide armament production winds down after the Cold War, the group is looking for specific projects helping foreign arms industries convert to profitable civilian uses, as well as forging links between U.S. and overseas companies.

• Modeling and Simulation, led by Terry Hilderbrand, will support the other Initiative Groups in FY 95 by focusing on six research areas — education, manufacturing, medical technology, environment, healthcare informatics and enterprise engineering. Modeling and Simulation will also seek to formulate some "key proposals" that could benefit Tech in terms of return on investment.

For more information on Initiatives Groups, contact Jim Cofer, director of the Advanced Concepts Office, at 528-7010.