

The GTRI Connector

The best medicine

Laughter is inner jogging.

—Norman Cousins

The scientific theory I like best is that the rings of Saturn are composed entirely of lost airline luggage.

—Mark Russell

I am an optimist. There does not seem to be much use in being anything else.

—Winston Churchill

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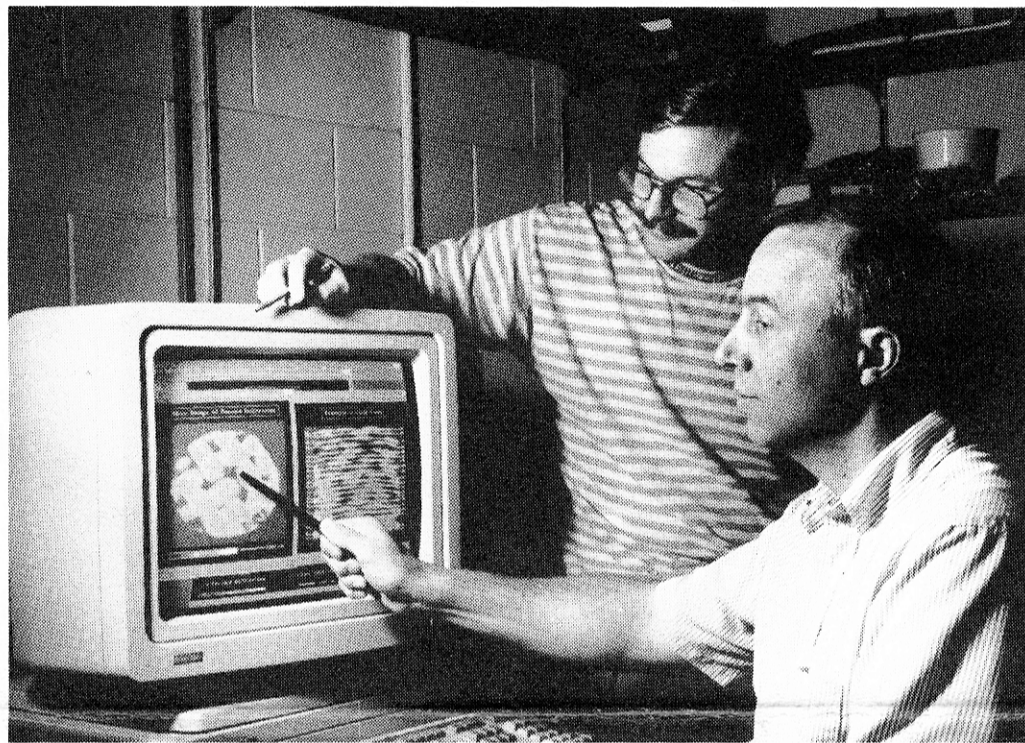
Defense Conversion Group Starts Work

The Georgia Tech Defense Conversion Working Group appointed earlier this year has been busily planning Georgia Tech's strategy for pursuing this important opportunity. Some \$472 million was appropriated by Congress to address the Technology Reinvestment Project (TRP) under the general umbrella of Defense Conversion. The Advanced Research Projects Agency (ARPA, formerly DARPA) is the government team leader of a council that also includes the National Aeronautics and Space Administration (NASA), the National Science Foundation (NSF), and the Departments of Commerce and Energy.

TRP was announced and described personally by President Bill Clinton in a speech on April 12, and was further defined in a series of one-day regional meetings (Tech representatives attended the one in Orlando, Fla.) held the week of April 12 to 16. The official Request for Proposal (RFP) was issued May 14. Proposals are solicited and are due July 23 in eight statutory areas including: dual-use critical technologies, commercial-military partnerships, regional technology alliances, advanced manufacturing, manufacturing extensions, and manufacturing education.

The Georgia Tech community has identified some 30 potential projects in the arenas of: computer-aided engineering data exchange, next-generation civilian aircraft, telemedicine, composite materials, consumer electronics packaging, microelectronics for telecommunications, transportation, manufacturing enterprise integration, agile apparel

Continued on page 6



Dr. Thomas Starr, right, discusses x-ray tomographic images with post-doctoral student Arlynn Smith. The images show the deposition of silicon carbide in a fiber-reinforced composite. (Photo by Gary Meek)

'Seeing' Material As It Is Formed

By John Toon, RCO

Collaboration between GTRI's Materials Science & Technology Laboratory, the School of Materials Science and Engineering, and two national laboratories has led to development of an X-ray analysis technique that enables researchers for the first time to visualize the step-by-step formation of a ceramic composite material in microscopic detail and in three dimensions.

Development of the technique was reported in the May 7 issue of the journal *Science*. The work will give researchers infor-

mation they need to improve the quality of the composites, which should help expand uses of the materials.

The technique is comparable to but has better resolution than medical X-ray techniques in which physicians take X-rays from different angles and then reconstruct them computationally into a three-dimensional picture of an organ.

Called X-ray tomographic microscopy, this method appears to have important potential applications in a variety of fields ranging from materials science to bone studies where researchers need to observe the behavior of complex materials as time passes.

The research effort was headed by John H. Kinney of Lawrence Livermore National Laboratory. It included Principal Research

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Observed & Noted

Successful proposals are the lifeblood of GTRI. Some tips on preparing proposals for research contracts are featured in this issue. *See page 2.*

A recent incident involving a Baker Building employee shows how important it is to be alert to suspicious strangers. *The story*

is on page 3.

Awards for grants and contracts continued to rise in April and May, compared with the same periods last year. *An account of this performance is on page 3.*

This year's GTRI Spring Fling Picnic was a highly suc-

cessful event, with fun, food, and prizes. *Stories and photos of the picnic can be found on pages 4 and 5 of this edition.*

An interest in baseball fits well with the work of doctoral student Norm Peterson at GTRI. He assists artificial intelligence re-

searcher John Gilmore, who has undertaken projects to project baseball games and manage traffic at sporting events. *The story is on page 6.*

In March, Georgia Tech research was featured in articles in publications with a combined circulation of 4.8 million

readers. *Read about them on page 6.*

A photographer's accident at the Cobb County Research Facility shows that safety can never be overlooked. *The story appears on page 7.*

A reader's survey

Seventeen GTRI staff members were recognized for their achievements at the recent Faculty/Staff Honors Luncheon. *The list of honorees appears on the back cover.*

And finally, it's not too late to return your survey of this publication. *See the back cover.*

Keys to Success

Proposal Preparation — Here's Some Help

By Lea McLees

If you are up to your eyeballs preparing proposals, capability statements and 'sources sought' replies — or if you'd just like to be — various campus services can make your job a lot easier. Following are summaries of some such offerings. Providers say they prefer as much lead time as is possible, but will do their best to accommodate any request.

Planning/Organizing/Getting Started

Groups preparing to write proposals can call Program Development Manager Bob Zimmer (OOD) for in-house, step-by-step training on making their documents shine



Among the tapes Bob Zimmer can share with groups preparing to write a proposal are "Writing the Winning Proposal" and "Managing the Winning Proposal," both by R.N. Close and Associates; "RFP Analysis: Discovering the Hidden Agenda," by Hyman Silver; and "Preparing the Winning Study Proposal," by Robert Baker. (Photo by Lea McLees)

with a minimum of stress. Zimmer meets with interested teams at their convenience to view and discuss three videotapes on writing, preparing and managing winning proposals in the 1990s. The tapes were prepared by Richard Close, who presented a similar, well-received seminar at GTRI about eight years ago. Among the key points the tapes stress are organization, planning, descriptive writing for a competitive edge, and allowing time to critique and revise the proposal before deadline. To view the tapes, you may call Zimmer at 894-3519 or send e-mail to bob.zimmer@gtri.gatech.edu.

Proposal assistance in targeting philanthropic grants and contributions is available from the Corporate and Foundation Relations Office in External Affairs. Funding sources include corporations, corporate foundations and private foundations. The office registers prospects, provides information on companies or foundations, assists with proposals, develops cultivation and solicitation strategies, identifies involvement opportunities, solves problems and arranges recognition events. For assistance with corporate prospects, you may call 853-0140; for help with foundation prospects, you may

call 894-3810.

Georgia Tech Research Information Database (GTRID)

Computerized summaries of research projects around campus are available to everyone via GNet from the Georgia Tech Research Information Database (GTRID) on GITVM1. Maintained by the Research Communications Office (RCO), GTRID contains information on projects begun since 1982 and can provide related experience components of a proposal, capabilities statement or Request for Proposal (RFP) background request.

An abstract, key words, project number, title, sponsor, project director, lab/school/department names and a dollar amount/length of contract are contained in each file. The percentage of projects available on-line varies; generally 60 percent of GTRI projects and 40 percent of academic projects are available, said RCO's Acting Director Lee Hughey.

GTRID may be searched by National Technical Information Service (NTIS) codes, key words, lab/school/department name, project director or sponsor name. Files can be printed to the laser printer in OCA, Room 239 Centennial Research Building. Data on classified projects is not accessible to anyone who should not see it.

Detailed manuals on GTRID are available from RCO, Room 223, Centennial Research Building or by calling 894-3444. For assistance or a demonstration, contact Hughey at 894-3444 or send e-mail to lee.hughey@gtri.gatech.edu.

GTRI Biographical Sketch Database (BSD)

Biosketches on about 550 GTRI researchers are available through the GTRI Biographical Sketch Database (BSD) maintained by Mary Ann Burke in RCO. Each biosketch, maintained in a standardized format, includes information on education, employment, experience, specific fields of interest, professional achievements and recognition, patents and publications. A concise summary of each biosketch also is available. All BSD information is available on computer disk in WordPerfect 5.1, as well as on paper.

Biosketches are revised upon request when changes occur. Permission to use a researcher's biosketch should be obtained in advance from that individual.

Those with biosketches currently in the database are encouraged to send in revisions or corrections as necessary. New GTRI staff members and longtime staff members who have not submitted a biosketch are asked to add theirs to the collection — 100 percent participation is a short-term goal.

To revise a biosketch, add one, or request copies of one or more on file, you may call RCO at 894-3444. Production questions may be addressed to Charlotte Doughty at 894-6965. Suggestions for improving the database or questions on procedures and policies may be directed to Burke at 894-6981 or maryann.burke@gtri.gatech.edu.

Best • North America

Another source of professional information about colleagues is the Best • North America database. It is a collection of information about researchers from 138 schools in the United States and Canada. The database contains information on approximately 500 GTRI researchers and 425 Georgia Tech academic researchers. Each record includes information on expertise and research interests, patents, linguistic ability, professional

achievements and recognition, publications and professional memberships. Full text searches on any word are possible, as well. Best • North America also contains institutional profiles, research facilities, patents, copyrights, and graduate student data for each of the participating universities.

Information on researchers from Georgia Tech and the other 137 schools participating in Best • North America can be obtained from Barbara Henry, manager of the Contracting Support Division in the Office of Contract Administration (OCA). The Georgia Tech portion of the database, "BEST Georgia Tech," will be available on-line to the campus this fall, said Research Associate Debbie Bell of the Office of the President. BEST Georgia Tech will allow campus users to access the Georgia Tech information directly.

To add or update information in the BEST database, you may call Bell at 894-6906 or send e-mail to debbie.bell@gatech.edu. To get information from the database you may call Henry at 894-6944.

If you have suggestions/tips on proposal preparation or know of additional resources, please share them with your colleagues via THE CONNECTOR. You may send e-mail to lea.mclees@gtri.gatech.edu or call 894-3444.

Zimmer, McDougal Offer More Tips On Preparing the Winning Proposal

◆ Check organizational charts and long-range plans for the potential sponsoring organization — many are available from Bob Zimmer. "This will help if you want to know how to relate to the sponsor and who to call to get helpful information," he said.

◆ Take advantage of the experience, resources and corporate 'memory' of seasoned proposals writers, CAL Associate Director George McDougal advises younger staff members. "I have two drawers plus archive files of past proposals which may save some creative writing time," he said.

◆ Most importantly, follow proposal preparation instructions to the letter. Deviating from the instructions is inconsiderate of proposal evaluators and is unprofessional, McDougal says.

◆ Stay abreast of competitors' activities by reviewing, for example, *Commerce Business Daily* via the GTEL network, Zimmer says.

◆ Tailor the information gleaned from biosketches and research project listings to fit the particular document you are working on, he adds.

◆ Obtain a critique of your strategy and technical approach from independent, expert reviewers, Zimmer said.

◆ Finally, help your colleagues — provide updated, detailed and concise abstracts of your work for the Georgia Tech Research Information Database (GTRID), McDougal says. Also, provide biographical information for the GTRI Biographical Sketch Database and Best • North America. That way you won't be fielding colleagues' requests for these items while trying to meet your own proposal deadlines.

Composites

From page 1

Scientist Thomas L. Starr of GTRI, Associate Professor Stuart R. Stock and student Mark D. Butts from Tech's School of Materials Science and Engineering, Thomas M. Breunig and Monte Nichols from Sandia National Laboratory in Livermore, Calif., and David Haupt and Allyn Saroyan from Lawrence Livermore.

The researchers observed the formation of an important composite ceramic consisting of silicon carbide matrix reinforced with continuous silicon carbide fibers. This is actually a family of materials highly regarded for its strength, toughness and ability to withstand corrosion and high temperatures. However, the properties are hard to control and the materials are expensive to make.

Very fine, amorphous silicon carbide fibers about 1/10 the diameter of a human hair are formed and spun into threads, woven into a cloth and formed into the desired shape. Spaces within threads and in the cloth structure are then filled at high temperature by a gas which deposits crystalline silicon carbide. As much of the void volume as possible must be filled to yield a dense material having the most desirable properties.

The samples in the study were processed to various stages of completion in special reaction vessels at Georgia Tech, then rushed to California to be analyzed at Lawrence Livermore by the Lawrence-Sandia team.

Livermore's Kinney said, "The ability to observe the step-by-step growth is important because it enables us for the first time to see how the complex architecture of this material determines its growth and consolidation. This technique points toward controlling the microstructure and tailoring materials to get good mechanical properties and reduce cost."

According to Starr, "We are able to watch with great detail how the matrix fills the pores between the filaments and how it fills in the larger pores between the yarns — something we could never do before."

The X-ray tomographic microscopy method used was developed at Livermore and Sandia over the last four years, partly under the sponsorship of the Strategic Defense Initiative Organization.

When used to study ceramic-matrix composites during fabrication, the images show researchers how vapor deposition progresses in three dimensions and allows quantitative measurements which can help understand deposition problems when they arise.

"The information obtained has helped confirm a new theoretical model of the vapor deposition process developed by Tom Starr at Georgia Tech," Kinney said. "The model will be refined in light of our experimental findings, and our final results will be used to help improve the cost effectiveness of the vapor deposition methods."

At Georgia Tech, the research was sponsored by the U.S. Department of Energy's Advanced Industrial Concepts Materials Program.



The patter of feet on top of the Baker Building these days does not signal an early visit from Santa, but it still indicates the arrival of a gift. A team of workers is stripping off the building's old roof and putting on a new one. The process should be complete by the end of June. (Photo by Lea McLees)

Tips for Traveling Safely To and From Work

By Lea McLees

Paying attention pays off, says Diane Smith (EOPSL). By keeping an eye on her surroundings she realized and thwarted a man's attempts to follow her on two afternoons as she left the Baker Building.

A man in a brown Oldsmobile Cutlass followed her from work on June 4 and 10 as she drove through town, even through a U-turn at one point. The first time, Smith lost the man at an intersection. The second time she was able to get the car's license plate number, drive to a grocery store and find an off-duty policeman, who detained the man while she left.

Smith, a GTRI employee for almost 11 years, alerted others on campus to her experience through Georgia Tech's Special Crime Awareness Team (SCAT), which distributed the information around campus electronically. She has since learned that the man who followed her is someone she knows — dressed in a hat, sunglasses and clothes she did not recognize. Smith is pursuing legal action to keep him from following her again.

Stalking is a crime punishable by imprisonment and fines, says Georgia Tech Police Chief Jack Vickery. A law passed earlier this year by the Georgia General Assembly provides that:

- The first stalking offense is a misdemeanor. The second is a felony, punishable by one to five years in prison. An alleged or convicted stalker who violates a court order forbidding contact with his/her alleged or proven victim faces a fine of up to \$10,000, in addition to imprisonment and a felony charge.

- Stalkers can be prohibited from coming to a victim's place of employment, school or other specified locations. Victims also are entitled to know when their alleged stalkers are released from custody.

To thwart the plans of those who might follow you, as Smith was able to do, Vickery offers some safety tips for traveling to and from work:

- Stay alert to your surroundings, who is in front of and behind you. Know what these people are doing.
- Know which stores and restaurants in

your neighborhood and along your travel routes are open late. Know police and fire stations locations.

- Have car, house or office keys in hand, ready to let yourself in at your destination.

- If followed on foot, cross the street and go to a well-lighted, populated area to call police. Scream for help if you are really scared.

- If followed in a car, change direction immediately and make a visible point of writing down the vehicle's license number. Drive to the nearest police or fire station, open business or residence where you can safely call police. If no safe areas are nearby, honk the horn repeatedly and turn on emergency flashers.

- If riding the bus or subway, be aware of who disembarks with you. Walk to a populated area if you feel uncomfortable.

Contract Awards Update

Following are awards for May and June 1993 and the year-to-date, as compared to awards in 1992. All figures are in millions of dollars.

By Month	FY 93	FY 92	Increase
April	\$11.3	\$5.3	113%
May	\$5.5	\$5.1	8%

Cumulative	FY 93	FY92	Increase
April	76.2	64.9	17.4%
May	81.7	70	16.7%

This level of performance is outstanding, says Executive Associate Director Bob Shackelford—especially in view of the budget uncertainties most of GTRI's sponsoring agencies are experiencing.

"The GTRI staff has done an amazing job of increasing market share in a declining funding environment," he said. "Based on eleven months of data, GTRI is projecting a level of performance that equals or exceeds the second highest awards year in its history."

That second highest year was FY 90, with awards totaling \$88.6 million. The highest awards year was FY 91, during which GTRI employees brought in contracts worth \$98.4 million.

Final budget figures for FY 93 should be available in August.

Focus on Folks

Annual Spring Fling Picnic Very Successful

About 950 GTRI employees and invited guests, including Georgia Tech President **Pat Crecine**, Vice President **Demetrius Paris** and Associate Vice President **Jerry Dark**, attended the sixth annual GTRI Spring Fling picnic May 27. They enjoyed good food, great games, the antics of Georgia Tech's "Buzz" mascot, and the ever popular dunk tank under generally sunny skies. Lucky picnickers took home 85 door prizes.

"I heard one compliment after another about the picnic," said Associate Director **Pat O'Hare** (OOD) said after the event. "As far as I'm concerned, it was the best one ever."

The Burger Bowl became home to a carnival fair of games, volleyball and other activities. Picnickers won prizes just for playing Spin Art, Texas Tornado, Two-shot Golf, Tip the Cat, Leaping Lizards, Pin Z, Vee Ball, Pachinko, Pop-a-Shot, and the new, very popular High Striker.

Lunch this year featured a change from the traditional menu of hamburgers and hot dogs. Instead, picnickers enjoyed baked chicken and barbecued pork plus buns, coleslaw, pasta salad, ice tea and lemonade and soft drinks. For dessert, fresh popcorn, snow cones, potato chips and ice cream treats tempted everyone.

Ten volunteer "dunkees" plunged into the famous GTRI dunk tank: **DW Senn** (RCO); **Charlie Brown** (OOD); **Bill Cooke** (MATD); **Ray Kangas** (RSD); **Carl Baxter**

(FMD); **Henry Paris** (MSTL); **Jeff Cook** (MSD); **Jerry Dark** (OHR); **Dave Camp** (MATD); and **Robin Poole** (CMDL). The two alternates were **Jerry Bryson** and **Ed Gilmore** (RSD). Dunkers had fun soaking their favorite targets — some even applied the group throw approach, which always managed to hit the mark.

GTRI Lab Group Director **Charlie Brown** (OOD), master of ceremonies for the prize drawings, was ably assisted by **Cathy Dunnahoo** (OOD), **DW Senn** (RCO), and other picnic committee members. Before awarding prizes, Brown recognized special invited guests and retired GTRI employees. Among the retirees attending the picnic were **Sam Alford**, **Gene Dixon**, **Jim Hubbard**, **Bill Nolte**, **Marguerite Osborne**, **Bob Wiloughby**, **Howard Dean**, **Don Esper**, **Ray Moore**, **Bob Thompson**, **Jerry Webb**, and **Pat Winn**.

The first prize, two round trip airline tickets to anywhere in the continental United States donated by American Express, went to **Dana Stocks-Douglas** (CAL). **Tom Atkinson** of VALIC presented two Braves tickets and a gift certificate from Red Lobster to **Dennis Brown** (MSD). (See adjacent box for a list of additional prize winners and donors.)

Supplies donated by outside organizations included game prizes from Littrell Ace Hardware; paper goods from MacDonald's; grocery bags from Kroger; potato chips from Old Fashioned Foods; and drinks from Pepsi.

Picnic co-chairman **Lee Hughey** (RCO) thanked all volunteers who ran games, monitored food lines, served snacks, gave out balloons, staffed the picnic headquarters and prize registration tables, and set up/removed picnic facilities.

Grover Richardson and **Luther Ward** (TSDL) were recognized individually for bringing and setting up the dunk tank and public address system. So were **Judy Wiesman** and **Kathy Gilbreath** (CAL), who prepared graphics and designed posters, invitations, badges and T-shirts, and **Cheri Wiesman** (OOD), who prepared many of signs used at the picnic. Facilities Management employees **Carl Baxter**, **Keith Hughes**, **Charles Johnson**, **David Parker**, **Greg Braxton**, **Joe Brooks**, and **Bret Beard** were important to the picnic's success. **Diane Smith** (EOPSL), **Harry Ross** (RPMD); and **Lynn Boyd** (Corporate Liaison) helped the picnic committee gather door prizes.

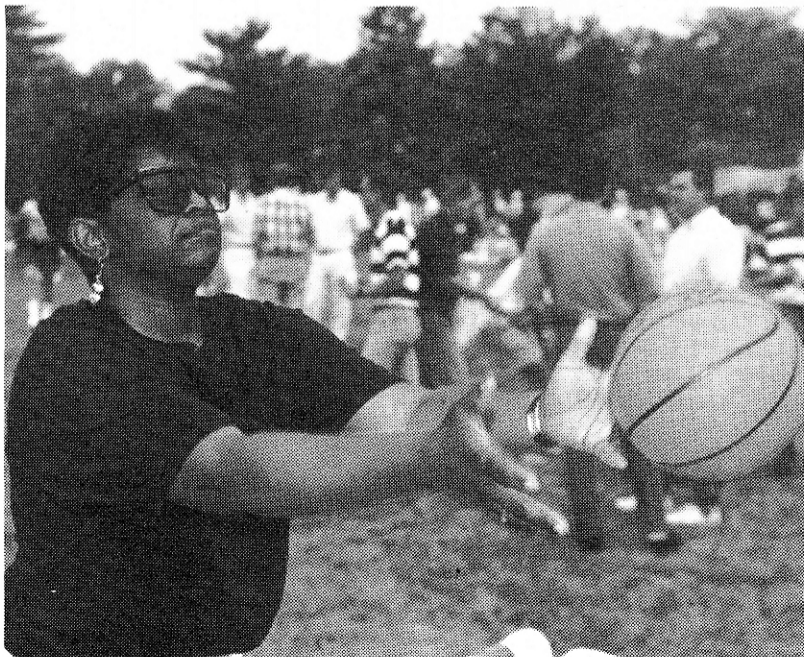
The picnic committee earned a special thanks, Hughey said.

"The group could not have been more dedicated, cooperative, hard-working and then brought it all together," he noted. Members were **Cheryl Barnett** and **Bill Howard** (OOD); **Carey Floyd** and **Wanda Fox** (MAPS); **Delora Gould** (FMD); **DW Senn** (RCO); and **Ida Taplin** (RSD).

Thanks to Lee Hughey for providing details about the GTRI picnic.

Scenes From The GTRI Picnic

Photos by Stanley Leary and Gary Meek





GTRI Picnic Has Many Prize Winners

The following individuals won prizes during the GTRI Spring fling:

Tom Collins (CAL): One-night studio suite, Residence Inn, Atlanta/Cumberland.

Mick West (ESML): Two days/one night/lunch for two, Courtyard Marriott, Atlanta/Midtown.

Stefan Roth (CSIT): Dinner for two, Mick's.

Terry Hawkins (FMD): Free weekend, Atlanta Bradbury Suites Hotels.

Russell Wright (EOPSL): Two adult/two child complimentary tickets, Zoo Atlanta.

Khalid Elibiary (CSIT): Romance Package for two, Northwest Atlanta Hilton.

Chase Hacker (CSIT): Two nights/one day/complimentary breakfast/assorted coupons, Holiday Inn Northwest.

Larry Holland (ESML): Breakfast for Two Escape Package, Atlanta Marriott Northwest.

John Bright (AERO): Weekend stay for two/assorted coupons, Atlanta Penta Hotel.

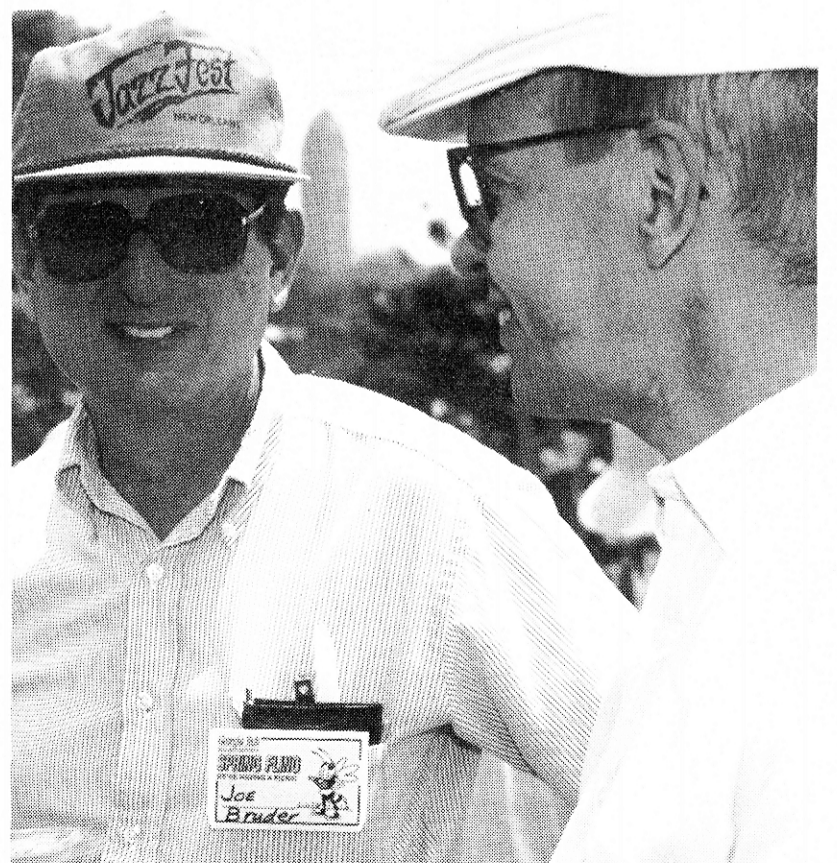
David Mohr (MSTL): Dinner for two,

Pitty Pat's Porch.

Derek Cook (COML): \$65 certificate for buff and wax, Classic Car Wash.

Elizabeth Bennett (CSIT): Tech Watch, Corporate Liaison Office.

Additional Prizes were donated by previously mentioned sponsors and Picadilly Cafeteria, Atlanta Falcons, French Quarter Suites, Fair Oaks Hardware, Atlanta Convention and Visitor's Bureau, Tech Bookstore, Aldo's Italian Restaurant, Howard's Delicatessen, Chick-Fil-A, The Peasant Restaurant, World of Coca-Cola, Executive Car Wash, Antonietta's Italian Bistro, Tech Computer Store, CNN, Atlanta Braves, Ruby Tuesday, First World Travel, Fox 97, Y104 and Y106, STAR 94, WGST, Miss Kitty's Dance Hall, WSB-FM, ARA, VALIC, Crystal Chandelier, WKHX, Tech Alumni Association, WCHK, and through the Corporate Liaison Program: Bell-Northern Research, National Semiconductor, Kodak, and Russell Corporation.



**News
&
Notes**

Doctoral student Rick "Norm" Peterson has gained valuable experience working with Senior Research Scientist John Gilmore on the "Terminus" traffic planning software project. (Photo by John Toon)

Baseball is Serious Business for Student in GTRI's Artificial Intelligence Lab

By John Toon, RCO

The 1991 World Series, which pitted the Atlanta Braves against the Minnesota Twins, gave Rick "Norm" Peterson an opportunity few baseball fans ever get.

Born in a northern Minnesota town that was one location for the baseball movie "Field of Dreams," he grew up a fan of the Twins. But after four years of working with GTRI Senior Research Scientist John Gilmore, Peterson has been won over to the Braves.

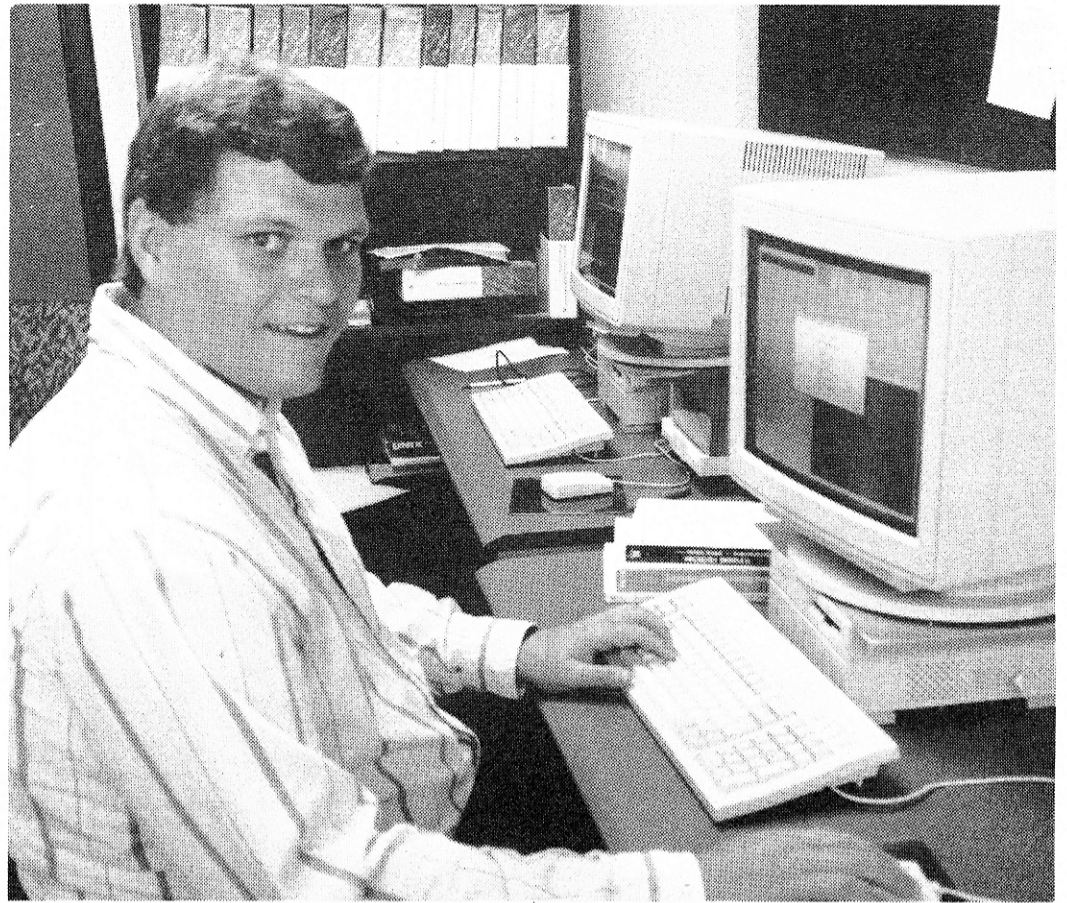
"During the 1991 World Series, I was waving my 'homer hankie' and doing the tomahawk chop at the same time," he admits. "I would have been pleased with the Series regardless of the outcome."

For Peterson and the other 12 students who work with Gilmore in GTRI's Artificial Intelligence Branch, baseball is not just a passion — it's also a serious part of their work.

America's favorite sport provides the focus for a tutorial program used to demonstrate the Generic Expert System Tool (GEST) the group developed. Getting fans home from a Braves game serves as a test problem for the traffic planning software "Terminus," unveiled last year. And the World Series each year puts the group's expertise to a public test, as it tries to predict the contest's outcome based on a Baseball Manager Expert System that analyzes team statistics.

A Ph.D. student in the School of Electrical Engineering, Peterson's academic interest is in digital signal processing as it applies to speech coding.

In the GTRI lab, however, he has been working on neural network issues and is now part of a team applying that technology



to the processing of images for use in electronic manufacturing. The work is part of Tech's interdisciplinary Manufacturing Research Center.

"We want to take a picture from a vision system and try to determine what is in the image, and where those objects are located," he said. "We're working directly with the Motorola Corporation to learn about its specific needs."

In addition to his work in neural networks, Peterson has been learning about project management, proposal writing and how Gilmore makes presentations to sponsor groups. He believes the education and experience he is receiving in GTRI will provide a good foundation for his eventual career goal of managing a research lab group.

"There are a lot of things to learn, and it is overwhelming at times," he confides. "This group is working on a variety of projects that

are interrelated and interesting. I'm getting a lot of very good experience."

Gilmore says Peterson is a great example of a student interested in getting as much out of his Georgia Tech experience as possible.

"Where many students are content with just going to class," Gilmore says, "Rick's involvement in extracurricular activities and our overall contract development process are the additional preparation that will make him successful in life. The broad exposure to how GTRI works will serve Rick well."

Now the big question: Will the Atlanta Braves make it to the 1993 World Series?

Gilmore's group hasn't done any simulations yet, but that doesn't dampen Peterson's enthusiasm for the team.

"They are going to be a strong team the whole year," he said. "The pitching is great, and their bats are starting to come alive..."

Research in the News

During March, articles about Georgia Tech research appeared in publications with a combined circulation of more than 4.8 million readers.

Selected highlights of those news placements follow:

- Commercialization of a new Composite Prepreg technology generated articles in *Business Week* (975,000 circulation.), *The Atlanta Journal-Constitution*, (505,000), *Advanced Materials and Processes*, (47,701), and *Advanced Materials* (5,000). The technology, developed by John Muzzy (Chemical Engineering) and Jon Colton (Mechanical Engineering) has been licensed to an Atlanta company, Custom Composite Materials, Inc.

- The 3-D Vision System developed by a GTRI engineer continued to receive publicity with articles in the *Minneapolis Star-Tribune* (410,920) and *Mechanical Engineering* (109,808). Information about the system has been published in media with combined circulation of more than 5.6 million readers.

- A study of Technology Transfer from the national laboratories gained note in *Chemical and Engineering News* (135,000), *Inside R&D*, and *U.S. Tech* (50,000). The work was done by David Roessner in the School of Public Policy.

- *Information Week* (200,000) published an article about a Traffic Planning System developed by John Gilmore and others in GTRI. The system, called "Terminus," is based on military software originally developed for an Air Force sponsor.

- An Associated Press wire service story about a Georgia Tech study of Exurban Industrialization appeared in a number of newspapers, including the *Milwaukee Journal* (255,497) and the *Columbia State* (145,363). The study, by Chris Nelson and others in City Planning, was sponsored by the U.S. Department of Commerce.

- *Industry Week* (288,000) mentioned two Georgia Tech projects in an article about materials research.

Defense

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manufacturing, intelligent vehicles, and more. Fourteen projects were selected as candidates for matching funds from the Georgia Research Alliance. Other projects will seek matching funds from industry, municipalities, federal non-Department of Defense (DoD) agencies, or the state economic development extension. Awards could be announced by ARPA as soon as October 1.

Working Group Chairman Jim Cofer (OOD) noted that the thrust is being met with tremendous enthusiasm from industry partners and other universities. Even DoD agencies offer encouragement, although they are not allowed to participate financially.

"It seems that everyone realizes that the country needs to move in this direction, and no one wants to be left out," he said.

Thanks to Jim Cofer for providing this report.

Georgia Tech
RESEARCH INSTITUTE

Photographer's accident shows safety isn't a given

By Mark Hodges

When most of us think of safety in the workplace, job security is probably what comes immediately to mind. But the experience of an ESTL photographer in early June provided vivid evidence that physical safety on the job cannot be taken for granted.

While shooting photographs for the GTRI Annual Report in a Cobb County Research Facility laboratory, Rae Adams decided to move one of her lights.

As she reached for the light, Adams placed her other hand on a metal canister to balance herself. An instant later, 125 volts of electricity moved through her body from one arm to the other.

"It was the strangest experience I've ever had," she said a day after the accident. "I could feel the electricity running through my heart. It was very frightening."

Fortunately, her arm fell away from the canister, breaking the connection between the shorted-out lighting unit and the canister. Adams was immediately taken to a physician, but was released without being hospitalized.

The cause of the shock, Adams later found, was that the lighting unit's wiring was faulty.

The next day, she was back on the job, feeling woozy and sore, but more sensitive than before to the workplace's hidden hazards.

Remember to check your equipment frequently. A malfunction can happen at any time.

News In Brief

Spring Research Horizons

The Spring edition of RESEARCH HORIZONS magazine has been published and is available in RCO. This issue includes features on research projects in the areas of synthetic vision, multichip modules, and advanced materials. In addition, the magazine has an essay on the lessons that American can learn from other industrial nations about national health care. Brief articles will appear on the topics of modular manufacturing, communications among robots, workshops on conflict resolution in the Asian republic of Kazakhstan, undersea hydrothermal vents, and methods of protecting traffic lights from unexpected power surges.

Research Horizons, like THE GTRI CONNECTOR, is available in print form but also can be read electronically. It appears in electronic form on the Georgia Tech Gopher Server in the "Research Communications" subdirectory of the "Daily News" directory.

GTRI Annual Report

For the past several months, RCO staff members have been compiling articles and stories for the FY 1993 GTRI Annual Report. Researchers who have been asked for inputs, but have not yet delivered them, needs to do so soon to ensure that their work is covered. Call Mark Hodges at 894-6987 or Jim Kloepfel at 894-6989 if you have questions about this report, whose planned publication date is early October.

These items were contributed by Mark Hodges (RCO).

Calendar						

Events of Interest

July 1

Introduction to ELM and the PICO Editor, 9 to 11 a.m., Room 239/Rich Building. Call the Office of Information Technology (OIT) at 894-4660 to register. Also offered 10 a.m. to noon July 27.

Understanding and Using Your Georgia Tech Computer Account, 1 to 3 p.m., Room 239/Rich Building. Call OIT at 894-4660 to register.

Developing Applications with the Iris Explorer, 5 to 7 p.m., Rooms 201 and 259/College of Computing. Call OIT at 894-4660 to register.

July 5

Object-Oriented Programming Using C++. Through July 7. For more information call Continuing Education at 894-2547.

July 6

Introduction to Multimedia. Through July 7. For more information call Continuing Education at 894-2547.

July 9

Multimedia: Executive Overview. For more information call Continuing Education at 894-2547.

July 12

Software Quality Assurance and ISO 9000-3. Through July 14. Taught by Carol Aton (EDL). Call Continuing Education at 894-2547.

Fundamentals of Software Engineering.

Through July 14. For more information, call Continuing Education at 894-2547.

A Guide to Voluntary Compliance in Safety and Health. Through July 16. For more information, call Continuing Education at 894-2547.

Multivendor LAN Connectivity Workshop. Through July 16. For more information, call Continuing Education at 894-2547.

July 13

Basic Radar Technology. Through July 15. Taught by Bill Holm (MAL). For more information, call Continuing Education at 894-2547.

Introduction to Multimedia, 1 to 3 p.m., Room 239/Rich Building. Call OIT at 894-4660 to register.

July 14

Introduction to Unix, 1 to 5 p.m., Room 239 Rich Building. Call OIT at 894-4660 to register.

Using the Wavefront Advanced Visualizer, 5 to 7 p.m., Rooms 201 and 259/College of Computing. Call OIT at 894-4660 to register.

July 15

Introduction to Oracle PL/SQL, 9 a.m. to noon, Room 239/Rich Building. Call OIT at 894-4660 to register.

July 16

GTRI Director Richard Truly speaks at the Pensacola, Fla. Naval Air Station, as part of the station's Naval Aviation Museum lecture series.

July 19

Introduction to NuPop, 1 to 3 p.m., Room 239/Rich Building. Call OIT at 894-4660 to register.

UNIX for Users. Through July 21. For more information call Continuing Education at 894-2547.

Overview of Multimedia Hardware and Software for DOS-Based PCs. For more information, call Continuing Education at 894-2547.

GTRI Director Richard Truly speaks at a luncheon meeting of the Georgia Economic Developers Association at the World Congress Center in Atlanta.

July 20

Demo Day at the Graphics, Visualization & Usability (GVU) Center, 1:30 to 5 p.m., Room 259/College of Computing. All are welcome. Refreshments served.

Trenching and Excavation. For more information, call Continuing Education at 894-2547.

Multimedia Production on DOS Based PC's. Through July 22. For more information, call Continuing Education at 894-2547.

July 21

Hazard Communication for Construction. For more information, call Continuing Education at 894-2547.

July 22

Introduction to SQL Query Function, 9 a.m. until noon, Room 239/Rich Building. Call OIT at 894-4660 to register.

Introduction to Virtual Reality. Through July 23. For more information, call Continuing Education at 894-2547.

July 23

Third International Conference on Computers in Urban Planning. Through July 25. Contact is Steve French (City Planning). For more information, call Continuing Education at 894-2547.

July 26

Introduction to the C Programming Language. Through July 28. For more information, call Continuing Education at 894-2547.

Principles and Applications of Millimeter Wave Radar. Through July 30. For more information, call Continuing Education at 894-2547.

July 27

Introduction to ELM and the PICO Editor, 10 a.m. to noon, Room 239/Rich Building. Call OIT at 894-4660 to register.

July 28

Capacity Modeling: Planning for Complex Applications (Oracle), 9 a.m. until noon, Room 239/Rich Building. Call OIT at 894-4660 to register.

Introduction to Macintosh and System 7, 1:30 to 3:30 p.m., Room 239/Rich Building. Call OIT at 894-4660 to register.

UNIX Tools. Through July 30. For more information, call Continuing Education at 894-2547.

Calendar compiled by Dorothy Anderson (RCO).

On July 6 through 7, Georgia Tech's Continuing Education Program will begin a Multimedia Certificate Program with a course entitled "Introduction to Multimedia." For details, call 894-2547.

Focus on Folks

Faculty/Staff Honors Awarded

Congratulations to the following GTRI employees recognized at the Faculty/Staff Honors Luncheon on May 26:

Outstanding Performance in Research and Development

Melvin Belcher (RSA)
Robert Englar (AERO)
Danial Mack (ESML)
Thomas Pratt (CMDL)

Outstanding Performance in Program Development

Edgar Lindsey (EDL)
George McDougal (CAL)
Guy Morris (RSA)
John Rohrbaugh (EEEL)

Outstanding Performance in Management

Don Clark (EEEL)
John Scoville (RSA)
Terry Tibbitts (ESML)

Outstanding Performance in Research Support

Cathy Dunnahoo (OOD)
Mark Entrekin (TSDL)
Kathryn Lindsey (TSDL)
Richard Maier (RSA/Dayton Office)

Georgia Tech Faculty Research Award for Outstanding Achievement in Research Program Development

George McDougal (CAL)

Recent STRAP Graduate

Harry Vann (FMD)

Have You Completed Your CONNECTOR Survey?

Remember to complete the survey on page 7 of the May issue and return it to the Research Communications Office before June 30. The anonymous survey takes just minutes; completing it will make sure your information needs and opinions are considered in planning the content of the publication.

You may return surveys via campus mail to CONNECTOR SURVEY, RCO/GTRI, 0800, or fax them to 894-6983.

If you have questions or need an additional copy of the survey, you may call Lea McLees at 894-3444 or send e-mail to lea.mclees@gtri.gatech.edu.

HMO Groups to Combine

The various HMO groups serving Board of Regents employees in the Atlanta area will be combined into one group with a several available options, after the board's April meeting.

Combining the plans may result in bargaining power, as well as a possible break on administrative costs, the board noted. That could lower overall costs, reducing expenses for the employee, as well as the institution. Only one negotiation will take place with each of the HMOs.

No plans have been made to change any of the benefits provided by the HMOs, but a different mix of HMOs may be offered at Georgia Tech effective January 1, 1994.



GTRI Director Admiral Richard H. Truly, third from the right, listens to students attending the Student-Faculty-Industry Conference's Executive Round Table during early May at Callaway Gardens Resort. Truly discussed the influence of changing technology on ethics. (Photo courtesy of Chuck Scales)

Professional Activities

Countermeasures Development Lab

Nick Pomponio presented a paper co-authored with **Joe Brooks** (ESML) titled "Enhancements to Helicopter Defensive Avionics through Sensor Fusion" at the National Symposium on Sensor Fusion. The meeting was held April 13-15 in Orlando, Fla.

The Naval Avionics Technological Briefing at Warminster, PA was attended by **Fred McKeen** May 4 and 5.

David Flowers attended the MIT/LL Cruise Missile Workshop May 5 through 7.

Economic Development Lab

Charles Estes was part of a delegation from the University System of Georgia that visited the Czech Republic, Slavic Republic, Hungary and the Ukraine. The group was investigating areas of possible cooperation between universities in these regions and the University System.

Electromagnetic Environmental Effects Lab

Juan Santamaria presented a paper titled "16-Channel PC-Based Aircraft Power Monitor" to the IEEE Instrumentation and Measurements Technology Conference on May 19 in Irvine, Calif. The paper was co-authored by **Joe Harris** and **Rick Levin**.

Environmental Science and Technology Lab

Several lab members made presentations at the international 40th Annual Conference of the Society for Technical Communication in Dallas, Texas, June 6 through 9. **Rae Adams** presented "Electronic Imaging: Possibilities and Ethics," a paper co-written with **Stephanie Babbitt**. **Claudia Huff** and **Nancy Davis** presented a seminar on "Adopting New Technologies: Managing the Resulting Organizational Change." Huff also

was a speaker in a panel discussion titled "The Business and Ethics of Information Technology."

An article by **Rae Adams**, "Sensors Detect Microbe Growth," appeared in the April 1993 issue of *Broiler Industry* accompanied by three photos she shot.

Microwave and Antenna Development Lab

Somnath Mishra presented a paper titled "Using ORACLE to Access and Manage Non-ORACLE Data in A Client Server Architecture" at the 1993 Conference for Oracle Developers Alliance (CODA) in San Francisco, Calif. Co-authors were **Tom Brown**, also of MATD, and **Art Vandenberg** (OIT). The conference

Personnel News

Countermeasures Development Lab

Robin Poole has terminated. Co-op **Mark Watkins** has transferred to COML. **Don Scott**, who has been on loan from ESML, will be transferring to CMDL Spring/Fall Co-op.

Microwave and Antenna Technology Lab

Barry S. Mitchell has terminated. **John W. Doane** has transferred in from Mechanical Engineering.

Signature Technology Lab

William R. Kreutel has terminated.

Threat Systems Development Lab

Violet G. Buck has terminated.

Personal Notes

Cradle Roll

Charles Wilson (TSDL) is the proud grandfather of Alex Miller, born May 17.

Belated congratulations to Carol and **Russell Ray** (ESTL)! They are the parents of a January 10 arrival, Abigail Elizabeth.

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