

# The GTRI Connector

## Did You Know...

The albatross drinks sea water. It has a special desalinization apparatus that strains out and excretes all excess salt.

If the world were to become totally flat and the oceans distributed themselves evenly over the earth's surface, the water would be approximately 2 miles deep at every point.

-- from *2210 Fascinating Facts* by David Louis

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## GTRI Researchers Bring in Record-Setting Amount of Research

By Lea McLees, RCT

GTRI is recording exceptional performance in winning grants and contracts during FY 95. Cumulative awards through February totaled \$72.9 million, up 53.1 percent over this time last year. That makes FY 95 performance the best ever recorded in GTRI as of the eighth month of a fiscal year.

The February awards figure is less than \$6 million dollars below GTRI's \$78.4 million total awards for all of FY 94, Director Richard Truly noted in a recent brown bag lunch with employees.

"We have the possibility of having the best new awards for GTRI that we've ever had in our entire history," he said.

Within GTRI, ELSYS and SEAL researchers have brought in the highest percentages of awards — ELSYS with 26.3 percent (\$19.2 million) and SEAL with 25.8 percent (\$18.8 million).

Also this fiscal year, September 1994 became GTRI's second-best awards month in history. Approximately \$21 million in grants and contracts were awarded that month, with ELSYS leading the way.

Academic schools and colleges are having an excellent awards year as well, bringing in \$57.1 in awards as of February. That is up by \$15.7 million dollars, or about 38 percent, over this time last year. Total Georgia Tech awards were \$129.9 million as of the end of February, compared to \$89.1 million at this time during FY 94.



*Glowing pansy, daffodil and Yoshino cherry tree blossoms welcomed employees and visitors to CRB during March. POD updated Cobb County's landscaping last year, and this year added new plants around the Techway (formerly WESCO), ERB and Baker buildings. Scott Humphrey and Joey Heidelberg are the POD employees who keep the flora around GTRI buildings looking lovely! (Photo by Lea McLees)*

## GTRI Researcher Named ASTM Fellow

A GTRI researcher recently was honored with a 1995 American Society for Testing and Materials (ASTM) Award of Merit, and also was made a Fellow of that organization.



Jim Walsh

Jim Walsh (EOEML), a 15-year GTRI em-

ployee, was among 20 ASTM members presented the award and title this year. He was recognized for "distinguished service and outstanding participation in ASTM technical committee activities," according to *ASTM Standardization News*. Walsh was nominated by an ASTM committee on biotechnology and biomass, and was selected by the organization's board of directors. The organization has about 35,000 members.

Among Walsh's accomplishments are developing standards for biomass testing that make it possible to characterize bio-

mass just as one does coal. He also helped devise guidelines for alcohol that can be mixed with gasoline, and has contributed to standard development for manufacturing the latest anaerobic digesters used in waste treatment.

Walsh holds bachelor's and master's degrees in aerospace engineering from Georgia Tech, and a master's degree in systems management from the University of Southern California. He is also a registered professional engineer. Before

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## Observed & Noted

GTRI's machinists play an important role in the organization. *Meet four of them on page 2.*

Selected February awards are in. *Learn what your colleagues are working on and who they are working with on page 2.*

GTRI employees are planning for the Olympics. *Find out who is helping and what the group is doing on page 3.*

Employees want to know about telecommuting, deliveries and sponsor visits during the Olympics. *See page 3 for their questions and the answers to*

*them.*

Several GTRI researchers are working on Olympics-related projects. *Turn to page 3 to learn about how GTRI will contribute to the 1996 Summer Games.*

This issue includes the final installment of our inter-

nal research update. *Read about two more projects on page 4.*

The Safety and Health Consultation Program is making a change. *Read about how the program serves Georgia small businesses on page 4.*

The Brown Bag

with the Boss lunches are ongoing through April 14. *Find out about the first meeting on page 5.*

Selecting e-mail software does not have to be difficult. *AIST's Tony White offers tips on page 6.*

The inaugural of Georgia Tech president Wayne Clough is scheduled for May. *Find out how you can participate on page 6.*

Meet two new employees and read your colleagues' professional news. *See pages 7 and 8 for GTRI Greetings and the latest updates!*

# News & Notes



James Langley



Randall Lloyd



Russell Miller



Arthur Parker

## Meet the Machinists

*A while back we introduced you to Tech's instrument makers. Now meet some of the machinists in GTRI's Machining Services. The four employees profiled here work in the Hinman Building, and their machining skills are unsurpassed. Each of them uses every machine in Tech's shop, though some concentrate in particular areas.*

### James "Jim" Langley

Jim came to Tech as a machinist eight years ago. He hails originally from Kansas and has been a machinist 21 years — he worked for Caterpillar and briefly for Lockheed before coming to Tech. He describes his work as "a little bit of everything." One particularly challenging job: helping make a waste-burning device for Tech's School of Civil and Environmental Engineering. Jim lives in Lawrenceville with his 15-year-old son, and has another son, 20. His hobby:

playing guitar and enjoying his music collection.

### Randall "Randy" Lloyd

Randy has been a machinist with Tech for about a year. Originally from Pennsylvania, Randy moved to Atlanta in 1971. He studied machining at DeKalb Tech and worked as a machinist in Norcross for seven years before joining Tech, where he does work that runs the gamut, including plastic welding. Randy's father, Neil Lloyd, has taught machining at DeKalb Tech for nearly 20 years; in fact, Randy is taking his dad's course in Computer Numerical Control (CNC) programming there currently. Randy, a Griffin, Ga., resident, has two daughters and a son. He spends his spare time coaching in the Central DeKalb Softball girls fast-pitch softball program, where his daughters play.

### Russell "Rusty" Miller

Rusty has been at Tech for six years. Rusty has been a machinist for 22 years and has been doing CNC programming — an important innovation in the ma-

chine tools field — for 18 years. Originally from Kentucky, Rusty studied machining in Indiana and worked for a Marietta firm before joining Tech. One job that stands out for him: making prototype video housings for fighter jets which helped record the dramatic Desert Storm battle footage. Rusty is married, has two teenage daughters and lives in Marietta. In off hours, he stays busy as a SCUBA diving instructor.

### Arthur "Bruce" Parker

Bruce has 21 years machining experience and has been a machinist with Tech for nine years. Bruce holds an associate's degree in applied machine technology from the Atlanta Area Technical School, and spent three years as a machinist in the Navy. He does a broad range of work, including CNC programming, at Tech: "You can touch on things that other machinists might not see in their career," he says. "Each day is a challenge." Bruce is Atlanta born and bred and lives in College Park. His hobby: his two sons, ages 6 and 12: "We play baseball, football — we do any number of things," he says.

## SELECTED FEBRUARY 1995 AWARDS

Title	PI/Laboratory	Sponsor	Funded Amount
Research in Acoustic and Noise Control	Ahuja, K. (AERO)	NASA	49,994
SADS-IVR System Testing & Instrumentation	McDougal, G. (ELSYS)	Air Force	302,910
Electronic Warfare Techniques Analysis	Lilly, L. (ELSYS)	Air Force	1,250,000
EC Test Results Correlation	McDougal, G. (ELSYS)	Air Force	1,100,000
OMEGA/VLF Demonstration	Vandermeer, W. (ELSYS)	Army	69,997
Foreign Comparative Test Effort for the Air National Guard	Tibbitts, T. (ELSYS)	Air Force	400,000
Infrared Countermeasures Simulator System (IRCMS) Upgrades	Burch, J. (EOEML)	Army	451,665
Permeation Testing of Organic Compounds into Plastic Bottles	Detter-Hoskin, L. (EOEML)	Coca Cola Co.	64,861
PHEMT Material Reliability Testing	Harris, M. (EOEML)	Army	63,580
Technology, Science & Policy Transfer Support to AEPI	Davis, N. (EOEML)	Army	24,900
Tactical Threat Engagement & Countermeasures Simulation System	Mullikin, A. (EOEML)	Army	200,000
Patriot Radar Environment Test Tool (PRETT)	Frost, M. (HRO)	Army	49,435
Process Models for Multi-Missile Manufacturing	Smith, J. (HRO)	Army	93,704
Analysis Task Opposum Wheel	Wilson, B. (ITL)	Army	150,108
EWVA of Unmanned Aerial Vehicle-Data Links	Harvey, B. (ITL)	Army	56,413
Network Protocol Simulation ...	Howard, D. (ITL)	Scientific Atlanta Inc.	67,752
Opossum Magic Analysis	Wilson, B. (ITL)	Army	223,768
High Density Signal Source Pedestal Integration	Roberts, R. (SDL)	Manufacturing Tech. Inc.	20,181
Waveform Simulator Operations Support	Kerr, R. (SDL)	Lincoln Laboratory	385,945
IEASMA/GTRI Test Facility for EAS Systems & Implantable Medical Devices	Woody, J. (SEAL)	IEASMA	64,954
Multipurpose Radio Frequency (RF) Test Coupler	Clark, D. (SEAL)	Spectra Research	18,684
Integrated Technical Evaluation & Analysis of Multiple Sources	Cotton, J. (SEAL)	McDonnell Douglas	183,994
Motorist Safety Warning System Using Radar Detectors Design of a Downwardly...	Greneider, G. (SEAL)	Radar Corp.	150,000
Radar & Electronic Surveillance Eng. Integration, Test & Evaluation	Cassaday, W. (SEAL)	U.S. Dept. of Treasury	100,000
Crossbow Simulator Analysis Support	Adams, J. (SEAL)	Dynetics Inc.	48,001
Low Probability of Intercept Radar Altimeter	Piper, S. (SEAL)	Lockheed Sanders Inc.	39,000
Patriot Advanced Capability (PAC)3 Seeker	Scheer, J. (SEAL)	Army	27,650
Battlefield Environment & Performance Simulator	Saffold, J. (SEAL)	Army	200,000
Radar Hardware Development Analysis	Belcher, M. (SEAL)	Army	548,000

## GTRI Planning Group Wrestles With Olympic Issues

By Rick Robinson, RCT

GTRI is getting in shape for the Olympics.

The Olympic Planning Process is under way. Its mission: to make sure the massive changes that will hit the Tech campus in summer 1996 produce minimal disruption for GTRI personnel.

A committee of "designated Olympic Planners" from a broad spectrum of GTRI labs, departments and other areas started meeting in November to begin preparing for the great privilege/challenge to come. The group convenes approximately every other week to bring concerns and ideas from throughout GTRI to the table.

The person coordinating the planning meetings is William "Sonny" Fletcher. In non-Olympic times, he is a program specialist with the Research Security Department.

Now, however, Fletcher has added two more hats. In addition to being the GTRI Olympic planning coordinator, he is also planning coordinator for the Research

Controlled Area (RCA), which refers to those parts of the campus outside the Village Security Zone and the Sports Venue Zones during the 1996 Games. (Fletcher notes that although his normal GTRI job involves security, his Olympic planning work looks mostly at operational and logistical issues.)

Fletcher stresses that he does not expect extensive plan statements from GTRI labs and departments. But he goes on to say that "I need everyone to participate in discovering what are the issues. ... My intent is to collect essential information, concerns and coordinate the resolution of issues raised."

Thus far, Fletcher believes, the planning meetings "are going well. ... To date they have concerned mainly information distribution and the sharing of issues."

In the spring, Fletcher will issue a GTRI Unit Plan, aimed at helping employees, customers and sponsors know what to expect. A draft of the Unit Plan has been prepared, and a final version is projected for May. The GTRI plan will be supported by a Common Plan covering the entire RCA.

Personnel throughout GTRI who have concerns or suggestions about preparations for the Games can contact their "designated Olympic Planner." These include:

**Bob Cassanova, AERO**  
**Jerry Heckman, ELSYS**  
**Ken Johnson, EOEML**  
**Michael L. Witten, IITL**  
**Jimmy Woody, SEAL**  
**Lee Hughey, AIST**  
**Julie Blankenship, FSD**  
**Jim Allison, MAPS**  
**Cindy Roberts, PDO**  
**Cathy Dunnahoo, PST**  
**Lea McLees, RCT**  
**Richard Tofani, RSD**

Support Services, which is highly diverse, has multiple planners as follows: Sandra Kirchoffer, SSD - SST

**Carl Baxter, SSD - FST**  
**DeeAnn Reese, Erma Johnson, SSD Purchasing**

**Phil Mullins, SSD - MST**  
**Dennis Brown, SSD - MST**  
**James Mason, SSD - MDT**  
**Greg Haggerty, SSD SST**

The following are not GTRI employees, but have been participating in the GTRI planning effort:

**Duane Hutcheson, OCA**  
**Nick Perez, GTRC**  
**John Fittipaldi, Army Environmental Policy Institute**

## Countdown to 1996

### **Will deliveries be allowed during the Olympic Security Period? And will I, for example, be able to get such things as essential office supplies?**

For those GTRI facilities in the Research Controlled Zone, limited deliveries will be possible. In the Village and Venue security zones, deliveries will be very difficult.

Essential deliveries will be made to both areas. However, whenever possible, needed supplies should be stockpiled before the Olympic Security Period (July 1 to Aug. 7, 1996).

### **Will it be possible for research sponsors, potential sponsors or others to come to my lab or office during the Olympics?**

It will be possible to have off-campus visitors within the Research Controlled Zone via special pass arrangements. Arranging visits within the Village and Venue Security Zones will be more difficult, though not impossible. Day passes for visits within the Village and Venue Security Zones will be possible for legiti-

mate reasons. However, it is recommended that any GTRI unit transfer meetings to the sponsor's facility or off-campus when possible.

### **I understand that employees will park in off-campus satellite lots and be shuttled to the Fifth Street bridge to enter campus. From the bridge, will there be a shuttle to such rather distant locations as the Centennial Research Building and the Baker Building?**

The controlled entrance on Fifth Street Bridge will be for those people who work in the Village Security Zone, and will require accreditation (background security check) credentials.

However, GTRI personnel working in the Research Controlled Area (RCA) will be able to get off the satellite shuttle at any of several controlled entrances along Tenth Street. These Tenth Street entrances are meant for use by GTRI and others based in the RCA; they should make it much more convenient to get to offices and labs.

Internal shuttles will also be available for people to get to offices and other locations inside the RCA. The frequency of the

shuttle service is not currently known, but the reported goal is to make sure no one will have to wait more than five minutes.

The RCA entrances will be manned by security guards, and a special pass will be required to enter. The general public will not be allowed in the RCA.

### **Will telecommuting (using computers, fax machines, telephones or other technology to work from home) be an option for GTRI workers during the Olympic period?**

That is a definite possibility, one that is available for consideration by each unit of Georgia Tech. It all depends on whether telecommuting is feasible and efficient for a given unit. That is a decision that will have to be made on a unit-by-unit basis. We in Olympic planning are encouraging telecommuting because it would reduce traffic, and it could mean that fewer people would need to be accredited for entry to the campus during the Games.

**Source: William A. Miller, Director of Olympic Planning for Georgia Tech.**

## Olympics Projects Are A Growth Industry for GTRI

By Rick Robinson, RCT

A number of Olympics-related research projects/demonstrations are in progress at GTRI, and the Institute's expertise is expected to play a noteworthy

role when the Games hit town — and campus — next summer.

Developing a comprehensive list of such projects is challenging, since new ones continue to be initiated. Here is the latest we have on Olympics-related projects in which GTRI has a principal role.

**Traffic Advisory Systems** — William Youngblood (AERO), associate director of the Transportation Research and Education Center, reports two pending traffic advisory projects. One entails kiosks to be placed around the state in such places as rest areas on major routes to

# 1996 News



**Charles Stancil is working on a project that would implement use of tiltrotor aircraft during the Olympics. For an additional Olympics research photo, see page 4. (Photo by Gary Meek)**

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# Focus on Research

A "fly-through" of the Olympic whitewater events venue is almost completed, says Nickolas Faust (EOEML). For more information on Olympics-related research, see the article on page 3. (Photo courtesy Nickolas Faust)

## Internal Research Update

Following is another of our continuing updates on internal research projects.

**•Laser Generation and Sensing of Ultrasound for Non-Destructive Testing; SEAL's Gary Caille, Michael Gray, John Doane and Mechanical Engineering's Jacek Jarzynski:** With increased emphasis on manufacturing technology, methods of detecting manufacturing flaws are becoming increasingly important. However, many current methods are limited — they do not work in real time, or do not provide clear, detailed images, or quantifiable information. For example, GTRI researchers are developing a novel way of monitoring and detecting flaws — by combining a laser-generator of ultrasound, and laser measurement of residual stress. The technology could eventually be used to predict failures in castings or other manufactured parts and extended to failure of solder joints.

Thus far, the researchers have demonstrated the laser sensing of residual stress in a controlled test sample. They expect to start promoting their research after this year.

"The training provided in the test setup and data taking was very useful in preparing for other contracts that use the LDV technique," Caille said.

Two Ph.D. students are working on the project.

**•Non-Doppler Remote Sensing Technique for 3-D Wind Field Mapping; Mikhail Belen'kii, Gary**



**Gimmestad:** These researchers are demonstrating the feasibility of a new lidar technique for non-Doppler wind field mapping. If successful, the new technique will allow mapping of 3-D wind fields in real time. The technology could be applied to aviation safety by detecting wind shear and downdrafts at airports; to pollution control, by tracking dispersal of pollution particles; and to basic boundary layer physics and meteorology.

The technique is based on a new approach to the statistical analysis of data from a photon-counting lidar. The new approach was suggested by Alexandr Gurvich of the Institute of Atmospheric Physics in Moscow, who came to Atlanta for eight weeks in 1994 to participate in the project.

The researchers built their own lidar, mostly from components on hand, some bought items and some custom made equipment. They also developed special software for the analysis.

The group has been successful in developing new instrumentation and analysis techniques and has made atmospheric measurements since they received their funding. They have also found a related research program headed by Narayanan Komerath in the School of Aerospace Engineering, and are looking into collaborative work. The researchers have also identified potential sponsors in the Army, Navy and environmental areas.

The project has resulted in a conference presentation and a paper submission. Two doctoral/masters students are working on the project.

## Safety Consultation Program Helps Companies Help Themselves

By Rick Robinson, RCT

There's a change developing in the Safety and Health Consultation Program. It could be likened to going from emergency care to a comprehensive, well-patient regimen.

The EOEML-based consultation program, now in its 16th year, advises Georgia small businesses on workplace safety and health issues. To date, the efforts of the program's 13 professionals and two support staff have resulted in some 7,000 consultations, estimates Paul Middendorf, project director.

Now a new pilot program aims to change the program's emphasis from one-day surveys to an approach that will integrate a comprehensive safety and health management system into a company's entire operating process.

"In the past we would evaluate for physical hazards and look at their techni-

cal programs to see if they met Occupational Safety and Health Administration (OSHA) requirements," Middendorf says. "Now we're trying to do something that would have longer lasting impact."

He compares the change to "the difference between giving someone a piece of bread to feed him for a day and teaching him how to make bread and feeding him for a lifetime."

Under the new system, Georgia Tech consultants will typically make six to eight visits to a business over a six-month to two-year period. The aim will be to "graduate" that business from the program, leaving it equipped to handle health and safety issues on its own. The old-style limited-scope surveys will still be performed, Middendorf says, but will be given lower priority.

The Safety and Health Consultation Program, also known as the 7(c)(1) program, works with small Georgia businesses and industries that employ 500 workers total and no more than 250 at the site undergoing consultation. Any sort of business, ranging from doctors' offices to manufacturing plants, can qualify for help, though priority is given to high-hazard businesses. Areas covered range from fire protection and electrical safety to chemical hygiene and blood-borne pathogens.

Georgia businesses have been lining up to use the Safety and Health Consultation

Program, which currently has a six-month backlog. The reason for this enthusiasm is simple: The program enables companies to comply with OSHA regulations, thereby eliminating or minimizing fines. Moreover, businesses get a safer, healthier workplace, thereby saving on Worker's Compensation insurance costs as well as the direct and indirect costs of treating, rehabilitating or replacing injured workers.

Georgia businesses pay nothing for the services of the Safety and Health Consultation Program, which is 90 percent funded by the federal Department of Labor and 10 percent funded through Georgia Tech. But a client company makes financial and other commitments, including instituting a corporate safety policy; management commitment and employee participation; work-site analysis, hazard prevention and control, and safety and health training.

Middendorf reports that similar comprehensive-management pilot programs are taking off in many Southeastern states. It's a regional effort, he said. "People in the region wanted to do something more, and they got an agreement from the federal government to highlight the new program."

*Next month, we will meet some of the professionals in the Safety and Health Consultation Program and learn more about how they do their work.*

## Employees Attend First in A Series of "Brown Bag with the Boss" Lunches

About 25 employees listened to and asked questions of Director Richard Truly during the first 1995 "Brown Bag with the Boss" lunch meeting. Among the topics Truly addressed at the March 7 meeting in ERB were:

**Customer profile.** At the end of FY 94, GTRI's customer base included U.S. Air Force, 31 percent; Army, 25 percent; other DoD, 17 percent; industry, 16 percent; other federal agencies, 4 percent; Navy, 3 percent; NASA, 3 percent; and state and local government, 1 percent.

**Hiring.** GTRI has 1,086 employees and is in hiring mode.

**Awards.** Outstanding performance in February, with potential for FY 95 to be GTRI's best awards year. (*For more of Truly's observations on this topic see related article, page 1.*) SEAL and ELSYS have brought in the largest percentages of FY 95 contracts. "Contract backlog is also a good story," Truly said. "This year we've got the highest backlog we've ever had."

### Milestones of the Past Two Years

**GTRI External Advisory Council Created.** "These are people with federal and state experience, and Georgia entrepreneurs," Truly said. "I think they are giving us some good advice." The council's next meeting is scheduled for April.

**More Internal Research Funds Awarded.** The GTRI Fellows Council oversees awards of internal research monies to researchers who request funding for high-risk, high-gain projects. This year projects worth just under \$500,000 are funded, compared to \$100,000 in internal research projects being funded just two years ago.

**New Research Thrusts Investigated.** Additional new research areas and applications are under exploration via the Advanced Concepts Office funding. A total of \$383,000 is being invested in developing research on advanced transportation, defense conversion, educational technology, Georgia emerging industries, medical technology, modeling and simulation, and law enforcement technologies.

**Faculty Leaders Programs Begun.** The Senior Faculty Leaders program attracts experienced researchers with exceptional work to GTRI. Six people currently participate. The Junior Faculty Leaders program has just been announced to help labs share the cost of hiring new Ph.D. recipients or junior researchers.

**Late Deliverables Reduced.** "In the last couple of years, GTRI has made tremendous strides in providing deliverables to sponsors on time," Truly said. "Now just under 80 percent of our deliverables are on time. That is excellent, compared to past rates. I believe our customers are most important."

**Policy and Procedures Manual Completed.** The manual offers guidance on rules, regulations and procedures at GTRI and is available throughout the organization.

**Vehicle Fleet Being Improved.** Among GTRI's 115 on- and off-road vehicle fleet are some that do not run well or look nice — but not for long. After this year GTRI will have a fleet of about 52 on-road vehicles that are in good, working condition.

Among the topics employees asked Truly, Research Support and Finance Director Charlie Brown, and Director of Enterprise Strategy Gerald Smith about during the brown bag were evaluation forms, the future of overhead rates, addressing GTRI's physical plant needs, and hiring new employees quickly.

*Do you have a question or idea that you would like to share with Richard Truly? He wants employee input on the brown bag lunches, including suggested topics for discussion, comments on format, and more. You can reach him by sending e-mail to richard.truly@gtri.gatech.edu.*

Walsh

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coming to Georgia Tech he worked for EBASCO Services and served in the U.S. Air Force. He is the director of Georgia Tech's Waste Reduction and Environmental Compliance Program and his work covers waste handling, treatment, minimization and recycling, as well as pollution prevention. He also researches the design and analysis of advanced pollution control systems for food processing wastes and biomass energy systems.

Future goals include contributing to and implementing ISO 14000 standards for environmental management systems. Similarly to ISO 9000, the 14000 rules set standards companies must meet to trade with the European Community and other countries — but the 14000 standards related to environmental safety and health compliance, while the 9000 standards govern quality programs.

The ISO 14000 standards may level the playing field for the United States when it competes with companies that supply cheap labor, Walsh noted. He and EOEML colleagues Paul Schlumper and Roc Tschirhart are finding ways to help industries audit their own compliance — they are working on a project with the Georgia Manufacturing Extension Alliance (GMEA) through Georgia Tech's Economic Development Institute.

### Volunteers Sought for GTRI History Project

Are you interested in GTRI's development over the years? Do you have historical information about the organization? If so, you may want to participate in the GTRI history project.

Volunteers are sought to compile a history of the organization, from 1919, when it was chartered as the Engineering Experiment Station, to today. You may be a current employee or a retiree. If you would like to participate, you may contact Janice Porter at 894-3401 or janice.porter@gtri.gatech.edu.

### Scholarships Available to Children of Tech Employees

Is your child already enrolled or planning to become a Georgia Tech student? If so, the Georgia Tech Faculty Women's Club is here to help.

The club offers scholarships ranging from \$500 to \$1,500, available for all majors at Tech. Any undergraduate student whose parent is employed by Tech is eligible. Selections are based on academic achievement and financial need.

Completed applications are due May 1. For more information or to obtain an application, you may call 971-9172.

## News & Notes

*Richard Truly talks with about 50 employees who attended a Brown Bag with the Boss meeting in Nickolas Faust's lab on the second floor of Baker. The informal gatherings will continue through April 14 in GTRI buildings on campus and at Cobb County. (Photo by Lea McLees)*



**Georgia Tech**  
RESEARCH INSTITUTE

# News & Notes

## Decisions, Decisions: Which E-mail Software Should I Select?

By Tony White, AIST

Greetings, everyone!

It appears that there is quite a bit of confusion about which E-mail program people should be using on their desktop computers. This is an attempt to share the latest correct information about recommended and supported E-mail programs for your Mac or personal computer (PC). (Unix is still not officially addressed). All official information is from Jackie Plunkett, GT site license coordinator in the Office of Information Technology, Client Services (OIT/CS).

### •For A Macintosh

The only program recommended, site licensed, and supported is Eudora, v2.1.1. It is free and requires only MacTCP as the network interface. It also can work over a dialup line. Make sure you have an error-correcting modem before trying this.

#### How to Get It:

(1) download it using FTP from the OIT/Client Services ftp server:

Node is 'ftp-cs.gatech.edu'

Username: eudora

Password: eudora1

You will find it under the Mac directory. Note that there is a slightly different version for the PowerMac series (better performance, same features) also under the same directory.

(2) Walk into Client Services in the Rich Building and find Jackie Plunkett, who can give you a diskette with the appropriate version of Eudora. Be sure to know the type of your machine and the IP number before going there. You should bring a high-density diskette, as well.



### •For the PC Using Windows 3.1

The only program recommended, site licensed, and supported by OIT for Windows is PC/Eudora v2.0.3. Its feature set and interface is nearly identical to Eudora (Mac). It requires a network TCP/IP package that includes a WinSock v1.1 interface. Several that do are: PC/TCP v. 2.11, 2.2, 2.3, 3.0; OnNet v1.1; PC-NFS v5.0; Novell's Netware/IP (not recommended), and the free "trumpet w/ winsock" stack (not recommended by OIT or myself).

It also can run over dial-in serial lines. Remember that reliable high speed communications from Windows at 9600+ baud usually requires that your serial port have a 16550A controller chip. High-speed (14.4+) modem \*cards\* always do

have this chip built-in.

It is absolutely essential that you have an error-correcting modem to use Eudora over dial-in; an attempt to use a non-error-correcting modem may appear to work but will give you endless subtle troubles. Look for the standards "V.42" or "V.42bis" or "MNP4 & 5" \*built in\* to the hardware when buying a modem. Most mid-priced name brands support these standards.

#### How to Get It:

PC/Eudora is free and available on site license through OIT/Client Services, in the same two ways as Eudora (Mac) is available (see above). Look under the "pc" or "windows" directory when logged on to 'ftp-cs'.

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## Three Gala Days In May Will Herald Clough Presidency

Three days of events and exhibitions, including an inauguration ceremony May 12 at Atlanta's Fox Theatre, a campus festival and a dinner at the Inforum technology center downtown, will mark Wayne Clough's official start as Georgia Tech's 10th president.

The Inaugural Committee, chaired by Dean of Architecture Thomas Galloway and comprised of more than 20 Tech administrators and faculty, has planned eight events for the May 10 to May 12 inaugural period. The Inaugural schedule is designed to include the entire Georgia Tech community, with events planned for a variety of on-campus sites, in addition to the near-to-campus events.

The events are as follows:

### Wednesday, May 10

**6-7:30 p.m.:** An invitation only opening and reception will be held for a

historical retrospective titled "Home Away from Home: A View of Georgia Tech History from the Dorms." This exhibit in the Georgia Tech Library will depict dormitory rooms as they were during various periods in Georgia Tech history. The exhibit will be open to the public May 11-June 10.

**8 p.m.:** "MasterWorks" Concert in the Center for the Arts. Georgia Tech's own jazz ensemble, concert bands, symphonic band, university orchestra, chorale and others will participate in a musical festival. Open to the campus.

### Thursday, May 11

**11:30 a.m. - 3 p.m.:** Campus festival on Third Street area, Success Center Festival Level and quad grassy area. Various activities, foods, door prizes, souvenirs and entertainment are planned. The festival is open to the entire campus.

**7:30 - 10:30 p.m.:** Cocktail buffet for faculty and staff. This will be a semi-formal event slated for Fernbank Science Center and showcasing regional Georgia cuisines. \$25 per person.

### Friday, May 12

**9 a.m.:** The traditional Inaugural Walk, as President Clough is escorted from campus to the Fox Theatre. The inauguration is open to campus and attendees are encouraged to join the walk, which begins at the Student Center. Shuttle bus service will be available if it rains.

**10 a.m.:** Inauguration ceremony at the Fox.

**noon:** Inaugural luncheon for invited dignitaries at the Georgian Terrace, across the street from the Fox.

**7 p.m.:** Presidential Dinner at the Inforum. This is an annual event hosted by two presidents — the president of Georgia Tech and the president of the Alumni Association. This black tie gala is held in the spring for donors to Roll Call who donate \$1,000 or more. This year the dinner will include a special inaugural tribute to Clough.

*For more information on inaugural events, you may call 404/894-3351.*



Maria Hybinette

## GTRI Greetings

Welcome to some of our newest employees!

### Ten Good Things We Know About Ingrid Maria Hybinette

1. She began work with GTRI in January as a Research Scientist I in the Information Technology and Telecommunications Lab.
2. Currently, she is devising a cache system for use with Sybase, and will soon start work on "automatic linking" — to find World Wide Web documents automatically based on a user's previous selections.
3. Maria (as she likes to be called) was born in Sweden, but moved to Atlanta when she was 15.
4. She attended Dunwoody High School and is now a U.S. citizen, though she retains a trace of a Swedish accent.
5. After graduating from Emory University in 1991 with a degree in math and computer science, Maria earned a master's in computer science from Tech in September 1994. She is working part-time on a Tech doctorate in computer science.
6. She is married to Tucker Balch, who is also a Georgia Tech doctoral candidate in computer science (and a pilot in the Air National Guard).
7. She and Tucker live in Atlanta on Northside Drive, and her family lives in Dunwoody.
8. She likes to tell about "my funny dog," a yellow labrador retriever named Dakota. He is very good at fetching the newspaper, and on occasion he fetches the neighbors' papers, too.
9. Maria is a long-time runner, and just entered the Peachtree Roadrace for the seventh time.
10. In her spare time, Maria pursues drawing and painting. Her speciality is portraits, and she has received awards for her art in the past.

*Continued on page 8*

## Olympics

From page 3

Atlanta, at hotels and in parking areas. The kiosks will offer information on subjects including routes to take; schedules of Olympic events and how to find them; traffic conditions and similar concerns.

In addition, an Advance Traveler Information Systems (ATIS) project is in progress, in which the Olympics will become a lab for field tests of the "Atlanta Driver Advisory System." In this venture, state, city and county "traffic management centers" will send traffic advisories by radio to 100 Federal Express vans and 100 state Department of Transportation vehicles during the Olympics. The project has major funding from the federal government, and Scientific-Atlanta is the prime contractor in charge of developing the system. Georgia Tech is providing technical assistance and leading an independent evaluation.

**Sports Venue Fly-through** — Nickolas Faust, a principal research scientist in EOEML, reports near completion of a project to produce a computer-simulated "fly-through" of the Olympic whitewater-events venue in the Ocoee region along the Georgia-Tennessee line. The U.S. Forest Service-funded simulation, starts near Atlanta and "flies" over Lake Lanier and the North Georgia mountains — showing roads and towns, among other things — before diving down to the Ocoee River area.

Faust, who is associate director of EOEML's Center for Geographical Information Systems (GIS) and Spatial Analysis Technology, says his group integrated data from the LANDSAT satellite, high-altitude photography and low-altitude photography. In addition, they had to simulate how the whitewater course will appear when it is finished for 1996.

TV viewers will likely see the resulting footage, which took nine months to create, whenever Olympic coverage shifts from one sports venue to another in North Georgia. The aim is "to give people an idea of where they are and how to get there," Faust says. He adds that there is interest in doing fly-throughs for other Olympic venues.

**Olympic Rotorcraft** — A master plan is "almost complete" that would implement use of tiltrotor aircraft during the Olympics, reports Charles Stancil, senior research engineer and rotorcraft specialist in AERO. These aircraft, which fly like turbo-prop airplanes but take off and land like a helicopter, would provide air transportation directly into crowded metro areas from points up to 400 miles away.

Georgia Tech has been active in advocating the use of differential global positioning navigating systems, which allow tiltrotor aircraft to land safely in poor weather and yet are fairly inexpensive. Tech is also an advocate of steep-angle approaches, which minimize landing noise and air-traffic congestion.

Stancil says the activity during the Olympic period will provide "an excellent simulation of urban intermodal transportation requirements during peak periods" and will

thus provide a good test environment for gathering operational data. Stancil is hoping for Federal Aviation Administration approval of routes and plans for a convenient "vertiport" landing site by the end of April.

**Hydrogen-Powered Buses** — John Handley, principal research engineer with AERO, reports that GTRI is involved in a project to study the viability of hydrogen-powered urban buses. The technology is expected to be demonstrated through use at an Olympic venue as well as in Augusta. The project is funded by the Department of Energy through Westinghouse Savannah River Co. and the Energy Research and Development Association.

GTRI is the project's system integrator. Among other things, GTRI is also responsible for modifying internal combustion engines to hydrogen fuel and for assisting with the design of hydrogen refueling stations in Augusta and in the Atlanta area. Georgia-based Blue Bird Body Co. is also part of the team. Handley says there is a hydrogen refueling station in Conyers, and therefore the Olympic equestrian venue there might become a demonstration site.

**Olympic Games Weather Support Program** — William Kreiss, principal research scientist with EOEML, reports Georgia Tech will "back up" the National Weather Service office in Peachtree City as it employs a local analysis and prediction system (LAPS) to make Olympics weather forecasts every three hours. A high-quality data line is currently being installed between Tech and Peachtree City. This August, Tech will lead a dry run of the weather-forecast system. "That will give us a whole year to iron out the bugs from the system," Kreiss says.

**Plasma Waste Processing System** — GTRI has a major role in plasma waste-processing technology, which may be demonstrated during the 1996 Games to treat wastes generated by the Olympic Village. Plasma technology uses extremely high temperatures to turn wastes to a glassy material and to vaporize heavy metals that can then be reused and resold. However, Lou Circeo, director of Tech's Construction Research Center, reports that funding for the plasma demonstration is uncertain at this time.

**Tech-Wide Projects** — GTRI and/or Georgia Tech engineers and scientists are also involved in numerous Tech projects with Olympics or potential Olympics application. These include: photo-voltaic research resulting in placement of a solar-power array atop the Aquatic Center; composite plastic reinforced structural materials used to construct a bridge across 10th Street; geo-thermal heat-pump technology applied to an Olympics housing project; a modular power-quality control device to protect Olympic and Georgia Tech computers; and a Sterling engine to collect solar energy and convert it to electric power for use during the Olympics.

## Focus on Folks

# Focus on Folks

## Professional Activities

### Electronic Systems Laboratory

The following papers will be presented May 22-26 at the NAECON Conference in Dayton, Ohio: "The Assembly Language Translation of the Operational Flight Program for a Tactical Fighter Plane's Radar Data Processor," authors **Charles Cole, Jeff Murray, Terry Tibbitts, and Emily Warlick**; "Module Management Architecture for Embedded Nonvolatile Memory," authors **Charles Cole and Linda Viney**; and, "Technology Insertion Problems and Solutions for Aging Avionics Systems," authors **Byron Coker and Neil Lareau**.

### Electro-Optics, Environment, and Materials Laboratory

On February 15, **Chris Thompson** and **Claudia Huff** introduced attendees at Training '95 to FAST (Factory Automation Support Technology). Their presentation was part of a series entitled "How Much Technology Do We Really Need to Do Our Job?" and it focused on wearable technology that enables users to learn while on the job by using a subset of virtual reality known as augmented reality. Georgia Tech efforts are currently aimed at applications in the food processing industry.

**Paul Schlumper, David Jacobi, Jim Walsh, and Roc Tschirhart** gave a one-day seminar to industry in the South Metro Atlanta area on "Occupational Safety and Health and Environmental Issues." This seminar, offered at Georgia Tech's new South Metro Regional Office, was given through the Georgia Manufacturing Extension Alliance.

### Congratulations!

**Kirk Mahan** recently passed the State Board of Examination and is now a Registered Professional Engineer.

## Personnel News

### New Hires

ITL welcomes **James Roberts** who began work as a GRA on February 9.

ELSYS welcomes **Steven Wright**, who began work as a Research Engineer on February 13.

## Personal Notes

### Our Sympathy

...to **Mindy Rakestraw**, whose father, French Johnson, died February 21 of a heart attack. A retired football coach, he lead Marietta High School to the 1967 Class AAA state championship. Johnson won 220 games in a coaching career that included stops at Lafayette, Rockmart, Marietta, Paulding County, Forest Park and Chamblee.

### Congratulations!

**Bert Watkins'** (RPT) son Bobby Watkins, bowled a perfect 300 game for the second straight year, going on to win the 44th Greater Atlanta Bowling Association (GABA) City Tournament recently. Bobby is also the GABA city champion "scratch," which means with no handicaps applied to scores. He will travel to Reno, Nev. in May to bowl in the American Bowling Congress Masters Tournament.

## Include Your News in The Connector

### Are you:

- working with an outstanding student co-worker or team working on a project?
- proud of something you have accomplished, either at work or after hours?
- formulating a question you would like answered?

If so, call *The Connector*. We can help share your achievements with colleagues, get questions answered — even lead a GTRI cheer welcoming your newest family member. You may contact any of the associate editors whose names are listed in the bottom left corner of page 8, or contact Lea McLees at 853-9079, phone: 894-6983, fax: lea.mclees@gtri.gatech.edu; or stop by Rm. 223 CRB.

### E-Mail

From page 6

### •Manuals for Eudora and PC/Eudora

Currently, manuals must be ordered directly from Qualcomm, the company that markets Eudora and PC/Eudora. They don't cost much, are easy to order, and arrive reasonably quickly.

Qualcomm takes purchase order numbers; I don't think they take verbal purchase order numbers. Their address is: Qualcomm, 6455 Lusk Blvd, San Diego, CA 92121-2779. Phone number is (800) 2-EUDORA. The price of a manual is \$8 for the plain paper version spiral bound (like PPC does), up to \$15 for the best looking and bound version. When ordering, make sure you specify whether you want the Windows or Mac manual(s).

### •E-mail for DOS

OIT will support the old NUPOP v.99g but does not distribute NUPOP anymore. Officially, if you can only run DOS, you should use Telnet or a terminal emulator

### Employees

From page 7



Bryan Dunn

### Ten Good Things We Know About Bryan Dunn

1. He began work in January as a Research Engineer I with GTRI's Information Technology and Telecommunications Lab.
2. He is focusing on communications system design, doing analysis, design and testing of systems for commercial applications. In addition, he is part of a team developing a cable TV testbed.
3. Bryan was a GRA in the fall, and then decided to accept an offer to work for ITL full time.
4. He says he likes being full time: "It's a lot of fun to work on commercial projects."
5. Meanwhile, he continues to work part-time toward a master's degree in electrical engineering.
6. Bryan hails from Harrisburg, Pa., where his parents still live.
7. He holds a bachelor's in electrical engineering from Drexel University in Philadelphia, Pa.
8. Currently, Bryan makes his home in Vinings. He is married and his wife Lisa is a textile designer.
9. Bryan likes Atlanta and has found that "it has a lot to do."
10. But he also expresses a sentiment that will baffle many long-time Atlantans: "I do miss the snow," he says.

and use 'elm' on your Email server that runs Unix.

Unofficially, NUPOP v2.0 exists and works well, usually - but it plays interesting games with memory sometimes, and there is \*no\* official support anymore, not even from the author. If you have troubles with it, you're on your own, unless your friendly local computer guru can solve the problem quickly. Don't waste too much time with it - upgrade to Windows, buy a capable TCP/IP package, and run Eudora.

### E-mail for Unix (On the Desktop)

Nothing is officially licensed and supported. There are many good mailers out there in various places, even though I don't know where to find them. At a plain terminal/ASCII interface, 'elm' is still pretty good.

Hope this helps everyone out there know what is available and supported, and how to get it! If you have additional questions, contact the computer support representative for your lab or support group.

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