

The GTRI Connector

Mailroom Gets New Name

GTRI's Mailroom has been renamed the Mail Center, and has relocated to Rm. 18 of the O'Keefe Building.

Vol. 13 • No. 9

Published Monthly for the Georgia Tech Research Institute Family

August 1997

Internet2 Holds Promise for Researchers

By Joey Goddard, OCA

Georgia Tech is poised to play a major role in development of the next generation Internet.

Internet2 (I2), as the project is called, involves collaboration of more than 100 colleges and universities and various commercial partners. The goal is to recreate the leading-edge research and development network that existed before the rise of the commercial Internet.

"I2 is not a network, it's a project," explained Ron Hutchins of the Office of Information Technology (OIT). Hutchins is the head of the Engineering Group for the Southeastern I2 initiative.

"I2 will enable education and research to thrive without competition from commercial Internet traffic," he said. Hutchins likens the project to NSFNet, the National Science Foundation's (NSF) network predecessor to the commercial Internet.

National connectivity for I2 will initially go through NSF's very high speed Backbone Network System (vBNS), Hutchins says. The vBNS has an Acceptable Use Policy which restricts the use of I2; however, this policy is consistent with the project's mission.

"There will be a transition to many more uses as we get experience with the new network," Hutchins said.

The I2 project differs from the commercial Internet in two ways. It will be 10 to

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Lab Overview

GTRI's Newest Lab: Arlington Research Laboratory

By Joey Goddard, OCA

The Arlington Research Lab (ARL), GTRI's latest lab, was established in July 1996. The office has existed since 1992, when it was part of the Concepts Analysis group. It then became a division of the Electronic Systems Laboratory (ELSYS) and was later moved to Research Operations, says ARL Director Ed Eagar.

"Last summer Admiral Truly called me and said, 'You look like a lab. You function like a lab.' It just made sense for us to

become a lab," Eagar said.

ARL's work includes providing specialized support to the Air Force in test and evaluation (T&E) resource planning and combat training range development.

"The type of work we do demands close contact with the customer," Eagar explained. "Our original work was to provide test and evaluation support to the Pentagon. We needed to have a presence in terms of engineering and research in this geographic area to serve the needs of our customers."

The lab has grown from supporting Air Force T&E to working with the Marine Corps Operational Test and Evaluation Activity, and is now branching into work with private industry.

Eagar is confident of the abilities of his

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The Arlington Research Laboratory includes, front row, l-r: John Meeuwissen, Mariam Sow, Anne Killea, Lynne Castle, Ed Eagar, Jim Bertoglio.

Back row, l-r: Nancy Christmus, John Olkowski, Ken Haynes, Ron Smith, Mike O'Neill, Malcolm Hyson.

Not pictured: Wayne Taylor, Mike Canavan, Alice Gross, and Steve Else; also Bob Beasley (STL), Jim Allen (RO), Kim Wood (ELSYS).

Sam Coons works at the Office of Naval Research Headquarters and Joe Eash is the Deputy Under Secretary of Defense (Advanced Technology); both are administratively assigned to ARL while working under the Intergovernmental Personnel Act of 1970 (IPA). (Photo courtesy ARL)

Observed & Noted

Are you suffering from Terminal Professionalism™? *Eliesh Lane and Catherine Joseph report that there's help for all of us on page 3.*

Georgia Tech continues exploring ways of enhancing its R&D and administration pro-

cesses. *Read an update on page 3.*

Looking forward to owning an electric or hybrid vehicle one day? *Rob Michelson updates you on GTRI's contributions to EV and hybrid research on page 4.*

The recently organized SDL is building on an almost 30-year tradition of research expertise. *Read about what SDL has accomplished, and learn about the lab's future plans on page 5.*

Annette Wein-

berger inspired many of her colleagues with her courage and her smile. *Take a minute to recall Annette's contributions to GTRI on page 6.*

What do an aspiring actress, a writer and a former swim team

member have in common? *They all are new GTRI employees -- meet them on page 7.*

GTRI welcomes four new babies this month. *Turn to page 7 to find out who deserves congratulations*

-- and a full night's sleep!

As usual, page 8 is filled with professional activities and personal news. *Flip this issue over to get up-to-date on your colleagues.*

The GTRI Connector is on line at <<<http://www.gtri.gatech.edu/connector/ctwelcom.htm>>>.

News & Notes

Meet the ERB MAPS Group

The MAPS team in the Electronic Research Building (ERB) provides support to the Information Technology and Telecommunications Lab (ITTL), Huntsville Research Operations (HRO) and two divisions of the Sensors and Electromagnetic Applications Laboratory (SEAL). Under the leadership of manager Jerry Lett, this group helps with proposal preparation and supports projects directors with all of their administrative needs, from tracking deliverables to managing overruns.



Jerry Lett

Jerry Lett is the manager of the ERB MAPS group. Jerry came to GTRI 13 years ago and worked in accounting for one of the labs. When the MAPS team was created in 1990, Jerry became a manager. He handles the financial part of proposal preparation, tracks and monitors contract deliverables, prepares lab reviews for director briefings, and takes care of other administrative and financial support duties as necessary. Before starting work at

GTRI, Jerry was an officer in the Air Force for 21 years.

Jerry grew up in Mobile, Ala., but traveled a great deal with the military. He earned his undergraduate degree in accounting from the University of Nebraska. Jerry also has two master's degrees in business administration: one in operations research and management science from the University of Michigan in Ann Arbor, Mich., and one in accounting from Western Northeast College in Springfield, Mass. Jerry and his wife, Patricia, have three children and two grandchildren. His hobbies include jogging and landscape gardening. Jerry also keeps busy as a minister in the clergy of the Catholic Church.



Cynthia Fellers

Cynthia Fellers is a research associate who began her career at GTRI as a student assistant. After earning a bachelor's degree in industrial management from Georgia Tech in 1984, she started work for GTRI, moving to the MAPS group when it was formed in 1990. Cynthia currently works with special projects and performs other MAPS duties. For example, she provides financial analysis and support to the FalconView project team.

A native of Athens, Ga., Cynthia broke

with the family tradition of attending the University of Georgia to come to Tech. She now lives in Marietta with her husband, Ronnie. When she's not at work, Cynthia enjoys reading and camping. She and Ronnie have camped all over the Georgia, from the Okefenokee Swamp to Cloudland Canyon.



Mary McKenna

Project Support Analyst Mary McKenna, has been with GTRI for 17 years and began work with MAPS when it was created in 1990. She originally worked at the Cobb County Facility, but transferred to campus after five years. Mary provides support to the Information Technology and Telecommunications Laboratory (ITTL). Some of her duties include preparing cost proposals, troubleshooting and maintenance of lab accounts, putting together monthly reports and review materials, and processing time sheets and deliverables.

Mary says that her family is the light of her life. Her busy household includes her daughter, Tracey, Tracey's husband, Todd, and her two grandsons Josh, 7, and Nickie, 15 months. She also has two dogs and six cats. When she's not busy with her family, Mary loves reading, movies and gardening.

SELECTED JUNE 1997 AWARDS

Title	PI/Laboratory	Sponsor	Funded Amount
Urban Transit Hydrogen Demon. Proj.	Handley, J. (AERO)	ERDA	\$ 45,000
TH53A AFT Fuselage/Tail Pylon Inspection Interval	Crawford, C. (AERO)	Raytheon E-Systems Inc.	84,176
Hydrogen Bus Technical Support	Stancil, C. (AERO)	ERDA	20,000
RR Shipping Container Analysis	Stancil, C. (AERO)	Axis Group Inc.	39,945
Task A3: Atlanta Short Haul Transportation System	Stancil, C. (AERO)	SAIC	101,860
Task Execution Plan Modification for Antenna Pattern Data Collection...	Pratt, T. (ELSYS)	FiberTek Inc.	40,017
J-Mass Background Player Development	Marks, J. (ELSYS)	U. S. Air Force	142,000
EW Techniques Analysis/RF Countermeasures Invest.	Rogers, W. (ELSYS)	U. S. Air Force	62,000
Engineering Task for AN/ALR-69 Advanced Crystal Video Receiver	Mack, D. (ELSYS)	U. S. Air Force	80,000
ALR-69 Test Bed Relocation	Willis, M. (ELSYS)	Ball Aerospace Systems Div.	20,000
JT&E Test & Analysis Support for the JADS EW Test	Morrison, R. (ELSYS)	Sentel	610,305
DRFM Test & Evaluation System Development	West, P. (ELSYS)	Amherst Systems Inc.	100,000
Performance Enhancements to the AN/ALQ-172 Antenna Range Test Facility	Drury, T. (ELSYS)	U. S. Air Force	54,000
Phosphor Technology Center of Excellence	Summers, C. (EOEML)	U. S. Dept. of Defense	1,984,647
Engineering Support for ATIRCM/CMWS Program	Mullikin, A. (EOEML)	CAS Inc.	875,052
Aircraft Computer Model Development - Subtask 5	Owens, W. (EOEML)	BDM Corp.	99,999
Flight Test Support	Carstensen, C. (EOEML)	Envisioneering Inc.	36,500
Phase Locked Loop Local Oscillator Feasibility & Design Study	Harris, H. (EOEML)	Microphase Corp.	25,000
Virtual Engagement Simulation Support	Strickland, M. (HRO)	U. S. Army	60,065
Single Channel Spectral Characterization Software Simulation & Hardware...	Dunn, B. (ITTL)	Nova Engineering Inc.	32,051
High Level Architecture Data Engineering Tech. Supp.	McLean, A. (ITTL)	U. S. Army	229,698
RADSL Digital Video System Design	Dunn, B. (ITTL)	MPhase Technologies	284,564
Computer Needs Assessment & System Implementation: Amendment 2	Witten, M. (ITTL)	Georgia Courts Authority	137,995
Assistance in Developing Business Plans for Digital Interactive Video...	Bohlander, R. (ITTL)	MPhase Technologies	25,000
Rapid Target Model Invention	Cohen, M. (SEAL)	DeMaco Inc.	40,000
Technical Support for the Longbow PMO	Holm, W. (SEAL)	Westar Corp.	56,437
CET SEN-95-0007-AN/FPS-85 Coherent Receiver Modification-IV&V RF...	Scheer, J. (SEAL)	PRC Corp.	52,709
Modeling of Aircraft Subsystem Design Assessment	Cox, F. (SEAL)	Lockheed Aeronaut Sys. Co.-Ga.	31,500
Proposal for In-Situ Determination of Acoustic Parameters of Navy Coatings...	Caille, G. (SEAL)	U. S. Navy	185,000
Elect. Protection Assess. Analy. Technique Development	Morris, G. (SEAL)	U. S. Air Force	150,000
Design, Analysis and Test Support	Daher, J. (SEAL)	Mission Research Corp.	50,000
New Radiating Structures	Kesler, M. (STL)	U. S. Dept. of Defense	399,958
Percolating Systems - Phase IV	Moore, R. (STL)	U. S. Dept. of Defense	250,000

Are You Suffering From Terminal Professionalism™?

By Elish O. Lane & Catherine B. Joseph, EOEML

One of the recent Lunch n Learn sessions in EOEML's Safety, Health and Environmental Technology Division was a barrel of laughs—literally!

We spent almost an hour making ridiculous sounds, forming funny faces and laughing together while viewing the National Technological University video "Humor in the Workplace." The experience was an eye-opening opportunity to

take a good look at ourselves and how seriously we take our work life.

Humor comes from the Latin word "umor" which means fluid, like water. This implies flexibility.



Unlike comedy, which is an art form, humor is a set of psychological and physical skills developed over time. These skills help us remain "fluid" during stress and trauma in our lives.

Terminal Professionalism™ is the tendency to become "dead serious" about our jobs. Although there is nothing wrong with being professional or serious, according to the video's host, it is important to maintain a sense of harmony in our lives. This goal can be easily forgotten in today's workplace. Each of us gets caught up in professional competition compli-

cated by date books and griefcases" filled with papers, proposals and deadlines.

Why? We were raised in a culture that says "when the going gets tough, the tough get going." If the going gets tough once or twice a year, this works — but if life gets extremely tough, we get tight, and then eventually become so brittle that some small incident can break us.

Part of avoiding Terminal Professionalism™ is maintaining balanced perspectives on combat and competition in the work environment. How many times has each of us heard the phrases "It's a war out there!" "We're under the gun!" "We've got to kill the competition before they kill us!?" If we think of work as a battleground, we go home each day feeling that our jobs ARE killing us — even though a bad workday is nothing like combat. In war, people die; in business, we may lose profit, standing, job, money, house, clothes...but we are still alive!

In addition to keeping our perspective, we must remember to regenerate our spirits by playing. Play is loss of tension through satisfying behavior, when winning and losing are not the primary goals. It is not the place for competition. Learning to play is not easy for most of us. To play, we must overcome physical and psychological fears of foolishness and failure; these fears discourage us from taking risks.

So, once in a while, let go and don't worry what other people think of you. Keep in mind that most others are worried about what you think of them! You must be disciplined to find, see, perpetuate, and strengthen the joy, fun and play that exist in life. These are the primary characteristics of a healthy personality and a creative

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Internet

From page 1

100 times faster, and will be capable of providing quality of service (QoS) to those using the network.

"QoS means that you can reserve bandwidth for a particular application and be guaranteed that it will be available," Hutchins said.

Eventually, users will be required to pay a fee to have QoS available to them.

"On the commercial Internet all information has the same priority," said Hutchins. "With QoS researchers can be assured that they will be able to perform research without network interruptions."

"QoS will allow for increased collaboration between computers," added Mary Trauner of OIT. "For instance, students at Tech will be able to perform research on scarce or specialized resources elsewhere in the country."

Some of the applications being considered for use on I2 include distance learning, high performance computing, tele-immersion and digital libraries. "It is important that we consider all the possibilities for R&D that I2 has to offer," Trauner said. "This information will be used in developing the performance requirements for the network."

Trauner is leading Tech's I2 Applications Task Force, which seeks information on projects that will need access to I2.

"We need to develop applications that will use the network, and then the network will advance to meet the needs of

those applications," she said.

"The technology that is developed for I2 will eventually be rolled into the commercial Internet," Hutchins added.

Georgia Tech, in cooperation with Georgia State University (GSU) and the Board of Regents, was recently awarded a two-year grant to be a vBNS site. Tech will also serve as a regional network interconnect point, or gigapop, for the I2 initiative.

"We're providing the interconnection site, but our expertise is being combined with others' to make this happen," said Hutchins. "It is truly a collaborative project of the best kind."

The Tech gigapop, known as the Southern Crossroads, will eventually interconnect 13 states in the Southeast from Washington, D.C., to Louisiana and from Florida to Kentucky. "The Southern Crossroads is the southeast's implementation of I2," Hutchins said. "It will bring I2 connectivity to most of the region."

Hutchins explained that Tech was a natural choice for a gigapop. "Atlanta is a connecting point for almost every major computer network in the country," he said.

Hutchins also cited the campus-wide networking initiative, FutureNet, as being instrumental in the decision to make Tech an I2 hub. "It is because of some of this work that we have the expertise to do the Southern Crossroads," added Hutchins. "Being a gigapop opens up many doors for Georgia Tech, and puts us in a wonderful place to shine."

Update

Study to Enhance Georgia Tech Research Development and Administration Processes Continues

Although the research environment in which Georgia Tech operates has become increasingly competitive, Georgia Tech's research funding has continued to grow rapidly for a number of years. To ensure that our faculty, staff and students are working in the best possible research environment, President Wayne Clough recently appointed a Research Development and Administration Steering Group to address improvements in this process.

The project is jointly sponsored by the Administrative Excellence Task Force (AETF), chaired by Robert Thompson, senior vice president of administration and finance; and the Research Council, chaired by Jean Lou Chameau, vice provost of research and graduate studies. Chuck Duffy, interim director of grants and contracts accounting, serves as project team leader.

To conduct a comprehensive assessment and redesign effort of the entire research development and administration process, the project has been organized to include a Steering Group, Process Resource Group, Focus Groups, and Project Staff to manage project activities. Additionally, consultants from Coopers and Lybrand will be called upon for assistance throughout the project.

Gerald Smith, interim director of GTRI research operations and Sam Blankenship, director of TEREC in ELSYS, are members of the Steering Group. Barbara Walsh, manager of GTRI fiscal services, serves on the Process Resource Group.

The project will be divided into three phases: Phase One is an assessment of what Georgia Tech is currently doing in its research development and administration process; Phase Two will generate recommendations to create the best research environment possible; and Phase Three will involve the implementation of Phase Two recommendations.

A June 26 orientation meeting was held for the Project Steering and Process Resource Groups. Since that time, project staff from the Office of Management Services have been busy conducting detailed interviews and focus groups with those involved in the research administration process, to gain a clear understanding of the current process.

In coming weeks, the project staff also will be administering a web-based survey to gather information about researchers' and administrators' satisfaction with, and utilization of, various services provided here on campus.

A summary of findings and survey results from Phase One will be complete in the fall. For further information about this project, please contact Chuck Duffy, project team leader, at 894-1026, or send e-mail to chuck.duffy@business.gatech.edu.

News
&
Notes

Focus on Research

Krish Abuja (left), Rob Michelson (right) and Hong-Mei Chen, an assistant professor at the University of Hawaii, attended a meeting on electric hybrid vehicles in Hawaii recently. (Photo courtesy Hong-mei Chen)

Modeling Tomorrow's Electric and Hybrid Vehicles

By Rob Michelson, AERO

Georgia Tech is involved in the design of electric and hybrid electric vehicle models. A team from GTRI and the School of Electrical and Computer Engineering led by Rob Michelson (AERO) is writing computer models for advanced battery chemistry, rapid charging motors and motor controllers, as well as integrated heating and air conditioning.

These models are being incorporated into a larger Defense Advanced Research Projects Agency (DARPA) model for the overall electric vehicle system. Others supplying models are the University of Texas' Institute for Advanced Technology, the University of Hawaii and the Southwest Research Institute.

Electric vehicle technology is of interest to the military because it offers potential for a quiet, more easily refueled armored vehicle (perhaps using electrical weapons such as "rail guns"). DARPA recognizes that the technology also has tremendous civilian potential as well, so it has been sympathetic to the funding of electric buses and cars. To efficiently design electric vehicles for military and civilian uses, models such as those being created at Georgia Tech are needed to provide the analytical "what if" results researchers desire before they bend the first piece of metal.

Thomas Habetler (ECE) is providing models for various types of synchronous AC motors and controllers which would provide the primary drive for all kinds of electric vehicles. Krish Ahuja and Ph.D. student Baha Suleiman (both of AERO) are modeling the heat transfer into and

out of a generic electric vehicle. Their model can predict heat loads and transfers for electric vehicles operating under different conditions at different times and latitudes. Free energy is important to use and control.

Heat from the sun, or "waste heat" from brakes or motors can be chan-

neled to where it is needed. More importantly, it can be shed intelligently to keep systems and occupants cool without requiring additional scarce energy input from the batteries to run air conditioner compressors.

The models are being written for use in not only electric vehicles, but for hybrid electric vehicles, as well. Hybrid electric vehicles couple high efficiency internal combustion engines to electrical motors to form a motor-generator set. This is not unlike a diesel-electric train engine in which an optimized diesel motor runs at a constant speed to produce electricity which then runs the train's traction motors.

Hybrid electric vehicles have the advantage of extended range and quick refuelling. The enabling technology necessary to allow fully electric vehicles to become popular is the battery. Current battery technology will not allow sufficient vehicle range to satisfy either the military or the general public. While commuter cars are possible using only battery power, the ability to take trips longer than 100 miles is still difficult in a car with the amenities of our present internal combustion designs.



Yi Ding (AERO) is not only modeling battery electrochemistry, but also is working to improve battery charging so that a battery pack requiring eight hours to charge, can instead be charged in eight minutes. Once this technology is fully demonstrated, the need for hybrid-electric combinations will diminish. In a related project directed by Chuck Stancil (AERO), Georgia Tech recently was responsible for integrating the components necessary to create a hybrid electric bus using hydrogen gas as a fuel to power the hybrid motor-generator. In the future, when battery technology improves and charging can be done quickly, such buses will be entirely electric, benefitting from the significant reduction in weight associated with the elimination of heavy metal hydride hydrogen storage tanks, not to mention the concern about carrying potentially explosive fuels on board.

AERO has invested in precision computer controlled battery charge/discharge equipment to not only support code validation as part of the ongoing DARPA modeling program, but to develop the new rapid charging algorithms which will make electric vehicles common place.

ARL *From page 1*

research team and support staff in GTRI's smallest lab.

"Every function that has to occur in a lab, we do," he said. "There's not a facet of operations that we don't touch."

ARL is slightly different from fellow campus labs because, in addition to technical and engineering products, its work focuses on management and economic issues that impact technology.

"We approach our work from across several technical and business specialties," Eagar said. "Although most of our staff has solid technical education, their career paths and experience have tended more toward engineering management, systems engineering and program management of large defense programs. As a result, our research staff has a broad general technical background. Where deep technical expertise is required, we draw on campus talent."

Almost all ARL researchers are graduates of the Defense Systems Management College Program Managers' Course, a five-

month course given by the Department of Defense.

"This is a very intense course and it is essential for the area we work in and the customers we support," Eagar said.

One current ARL project is the Test Resource Management System. This system provides the Air Force with an interactive tool to help manage its T&E resources.

"The Air Force has assembled a lot of information in the T&E area," explained Eagar. "We took it and segregated it into key processes. This system helps the Air Force manage its \$600 to \$700 million a year T&E budget."

The lab also is working on a Combat Training Range Management System for the Air Force. The system provides web-based interactive capability for Air Force staff in the Pentagon to assess range activities, such as utilization rates or environmental issues, at more than 80 worldwide installations. Missions and workloads can readily be adjusted to reflect changing priorities based on real-time assessments.

The lab has almost doubled customer sales during its first year, ending the fiscal year with just under \$3 million in awards. Researchers in the lab have performed several noteworthy accomplishments. Among them, John Meeuwissen, ARL associate director, traveled to Paris in June to represent Georgia Tech as an exhibitor in the Paris Air Show. Meeuwissen, who is fluent in French, was instrumental in pulling together Tech's first entry in the show. Ron Smith was a member of the White House Commission on Aviation Safety and Security and is mentioned, along with Georgia Tech, in the commission's final report. Smith recently received a letter from Vice President Al Gore thanking him for his contributions to aviation research.

ARL also houses representatives from Research Operations and two other labs. Jim Allen, GTRI/RO, whose activities are directed at business and contract development across the spectrum of GTRI activities,

Continued on page 5

*Lab Overview***SDL: 30 Years of Expertise, Recognition**

By Charles Wilson, SDL

The Systems Development Lab (SDL) is active in research and development of foreign threat system simulation and associated technologies. With almost 30 years of experience in foreign systems analysis and development, the laboratory has received national recognition for its work in development of threat radar and threat related system simulators, foreign technology assessment and system exploitation, and development of C3 and support systems.

"We try to replicate foreign systems as closely as possible so that U.S. forces are better able to defend against similar threats," explained lab director Jeff Sitterle. "The systems we develop are used mostly to test and evaluate the effectiveness of U.S. systems, and also to train U.S. forces.

"As a consequence of the nature of our research, in the past we have generally performed the majority of the work solely within SDL, because our sponsors know the level of support they can expect from us and have confidence in our expertise," Sitterle said. "However, SDL has now begun multi-laboratory initiatives that will foster greater cooperation across all of GTRI."

In July, Sitterle completely reorganized the laboratory to more effectively meet the challenges of a changing DoD market. The new organization is made up of six branches which bring a variety of technical skills to SDL's research mission, and are organized according to the technical expertise of individuals within each branch.

"We have been looking at our strategic plan for two to five years into the future," Sitterle said. "With this new organization we are now in a better position to meet our goals."

Located at the Cobb County Research Facility, the lab's six branches bring a variety of technical skills to SDL's research mission.

The **Systems and Mechanical Engineering Branch**, led by Rob Muzio, is composed almost totally of senior and principal engineers. In this branch are most of the background and experience for project management, system engineering and mechanical system engineering.

Allan Williams heads up the **Transmitters and Microwave Systems Branch**. Williams and branch personnel offer unique, long-term experience in high-power microwave systems, an area addressed by few organizations in the United States.

The **Analog and Digital Processors Branch**, under the oversight of Duane Patterson, is made up of research professionals with strong backgrounds in various types of electronic hardware



used in modern radar and communication systems, as required for state-of-the-art signal processing.

Todd Johnson heads up the **Software and Computer Systems Branch**, the second largest of the six branches. The size of this branch indicates the vital role of computers and software in modern electronic systems.

Because SDL develops and delivers major electronic hardware systems, extensive documentation is an inherent element of each program. To meet this need, the **Drafting and Documentation Branch**, headed by Mitch Cole, was formed under the new lab organization. Mitch and his staff bring to SDL's programs a wealth of talent in quality documentation.

Vince Camp is head of the **Hardware and Fabrication Branch**, which includes 16 electronics and mechanical technicians. This group is vital to SDL's success. Members turn engineers' designs into physical hardware systems that meet customer requirements for robustness and reliability over the item's lifetime. The lab also is expanding threat simulation research.

"In the past, our focus has been very narrowly focused on ground-based threat simulation, but lately we have begun seeing more work with airborne threat simulation and training systems," Sitterle said. Researchers in SDL have been developing systems that simulate radar and missile systems on foreign aircraft.

Although Sitterle is new to the job of lab director, he is not new to GTRI. He worked for six years as a systems engineer on the XM-TAS radar development project, and has major roles in other SDL programs. He was the chief of the Advanced Concepts Division for 3 1/2 years, and spent two years as chief scientist. In October he was named director after Joe Parks retired.

One priority identified by the lab's new leadership is standardization of program management tools and processes, including configuration management and quality assurance.

"The management of large, multi-year projects, which make up most of what we do, requires a great deal of oversight," Sitterle explained. "Standardizing

will make project management easier and leave more time for research."

The lab also has initiated a software process working group to steer the lab's efforts in reaching Level Two in the government's Capability Maturity Model (CMM), which assesses an organization's software development processes.

SDL remains GTRI's third largest lab with some 75 employees. The lab's contract awards of \$11.4 million for FY 97 show 19 percent growth over last year.

Sitterle hopes the lab will continue growing this fiscal year, not only in terms of awards, but also expertise level.

"We're trying to expand both our technology and sponsor base," he said. "This lab has existed in one form or another for almost 30 years. We think we are on track to be around for 30 more."

ARL

From page 4

has an office there, as does Bob Beasley, GTRI/STL, and Kim Wood, GTRI/ELSYS. Located in Arlington, Va., the lab offers conference rooms, high tech communications, and state-of-the-art computer capability. In the past year, the lab has had over 1500 visitors use its facilities, including customers, professional associations, business and government contacts, and visitors from campus. Nevertheless, Eagar is always mindful of the lab's mission.

"We have an identity crisis in that people assume we are a marketing group rather than a lab doing technical research," he said. "Of course, when we hear of opportunities for Georgia Tech or GTRI we will let people know — but we are here because the research we do demands close contact with our customers."

ARL has strong ties to other GTRI labs, and Eagar looks forward to continued joint efforts.

"We are always looking for ways that we can leverage our capabilities with organizations on campus, whether they are from GTRI or academic units," he said. "I always tell potential customers that we may have a small organization here in Washington, but we have more than 600 engineers in Atlanta on our team."

**Focus
on
Research**

ITTL's Lisa Sills demonstrates courts-related technology for Tommy Sexton, center, director of the Southeast Regional Law Enforcement and Corrections Technology Center and Jim Scutt, right, Center staffer, as Tom Horton, left, looks on. GTRI became an R&D associate of the Center on June 23. (Photo by Yaniv Adir)

Focus on Folks

Courage and A Smile: Annette Weinberger was A GTRI Inspiration

By Lea McLees, RCT

Annette Weinberger evoked wonder, amazement and respect in the best of her GTRI colleagues.

For years she faced debilitating illness with faith and a smile, and offered the best of friendship and service to GTRI colleagues — even when her doctors encouraged her to go on 100 percent disability, she continued to work 50 percent time, recalled Pat Rose (ITTL).

"Annette loved coming to work at GTRI, and that work kept her going," said Rose, Annette's friend and colleague.

Annette died late July 23 from complications resulting from scoliosis and an upper respiratory infection. Her funeral brought together more people than she ever expected, said her husband, Bill Weinberger, because of the impression she made.

"I think she touched the hearts of a lot of people," he said.

Annette came to GTRI in 1985 as a clerk in the former RAIL group, working for Charles Brown. She advanced to various administrative secretary positions be-

tween then and 1994, working in RIDL for Evan Chastain, and in SDL, and in AERO, as well.

"She was always sweet, kind and considerate of her co-workers," recalls friend Phyllis Hinton (SEAL). "Her smile could melt the angriest of engineers!"

Maggi Harrison (AERO) prepared paperwork to hire Annette, and also had the sad task of putting together Annette's final paperwork.

"Throughout her entire employment, Annette was an excellent worker, always dependable, with high ethics — and a real pleasure to work with," Maggi said. "I never remember her being unpleasant, negative or unhelpful. I feel we were all lucky to have known and worked with her."

During all of this Annette faced major back surgery, traction and pain. For a long time, she had to wheel an oxygen tank everywhere she went.

"Annette showed a lot of courage and stamina to keep working," Chastain said. "She always carried her workload."

But amazingly, she never became angry or frustrated about her situation, and she never lashed out at others. Colleagues attribute this strength to her incredible faith.

"She would talk to me about her health, but always ended by saying, 'I'm trusting in Jesus,'" recalled Barbara Cranfill (AERO).

"She was always smiling and had a sweet disposition that spilled out to everyone around her."

Adds Chastain: "To be that kind of a person, in spite of what she was dealing with — how many people do you know

who could be in constant pain that they knew would never end, and still be cheerful? But she was cheerful, no matter what."

And Annette kept her friends Phyllis and Pat laughing — so hard, at times, that they had retreat to the mail room at CCRF to regain their composure. The three went to lunch at Pizza Hut every week for a while to collect all the hand puppets from the Disney movie "Beauty and the Beast" for their children and grandchildren.

"We ate so much pizza trying to get those hand puppets!" Phyllis recalled.

Annette leaves behind a family of three: her husband, Bill Weinberger; son, Jason Paul, 20, an Eagle Scout who attends Kennesaw State University; and daughter, Amy Elizabeth, 15, a Harrison High School junior varsity cheerleader. She also leaves her mother, two brothers, a sister, and a niece, Deann, whom she helped raise.

A NationsBank account has been set up to accept donations for Annette's family. The account number is 3260492410, and the name is "Family of Annette Weinberger, aka William R. Weinberger." Donations can be made at any NationsBank branch, and are tax deductible.



Annette Weinberger

Recycling on Campus: Here's How

1. Recycling pick-up day on campus is every **TUESDAY**.

2. Containers are moved from inside the building to their designated pick-up locations outside no later than 8 a.m., and are moved back inside by 6 p.m.

3. Items recycled on campus:

• **MIXED PAPER** — No need to remove staples and paper clips.

Acceptable: Catalogs, white office paper, magazines, telephone books, junk mail, newspaper, brochures, computer paper, colored office paper and Post-It Notes.

Not Acceptable: Food-contaminated paper (i.e. pizza boxes, napkins), paper towels, tissue paper and facial tissue.

• **ALUMINUM CANS**

4. Individuals are provided with blue desk-side containers for collecting mixed paper.

5. The individual must put the paper from the desk-side container into the larger blue bins marked 'Recyclable Mixed Paper Only'.

6. Arrangements can be made to pick up large quantities of materials or other recyclable items (i.e. cardboard, books).



For further information, or if you are having a problem recycling in your building, contact Cindy Jackson at 404-894-2004 or send e-mail to cindy.jackson@pod.gatech.edu.

Laughter

From page 3

problem solver.

The video we viewed offered some specific advice how to achieve a "humor perspective" in our business lives: take yourself lightly; take your work or your challenge seriously. Several perspective tools are suggested in this video, including making funny photos of yourself in a photo booth and posting them at your desk; practicing "humaerobics," the making of funny facial expressions; and keeping a joy list of the experiences that uplift you and give you hope. You can also keep a "playtimer" calendar that devotes lots of space to week-ends and a metes out a few tiny spots for weekdays.



The video also suggests marking the end of each workday and the beginning of your free time — for example, wear a clown's nose on your commute home, or play a harmonica with your nose before leaving the office. The video also suggests giving our best 90 percent each workday, so that we may taken an additional 50 percent of ourselves home each weekend for ourselves and our families.

Just remember: Laughing at yourself and accepting others for who they are definitely can help you get through stressful times at work.

GTRI Greetings

Welcome to some of our newest employees!

Ten Good Things We Know About Amy Fleming



Amy Fleming

1. Amy is an Office Automation Systems Coordinator for the Sensors and Electromagnetic Applications Laboratory (SEAL).
2. Her duties include computer support and technical services. She does everything from building computers to troubleshooting and resource management.
3. Amy worked for GTRI part-time for 1 1/2 years before starting full-time in January.
4. She is a graduate of Southern Polytechnic Institute where she received a degree in Management of Technology.
5. Amy is pursuing a bachelor's degree in computer science from Southern Tech, and hopes to graduate this summer.
6. In the fall, she plans to begin a master's degree in information systems.
7. A Georgia native, Amy grew up in Newnan, and now makes her home in Marietta.
8. When she's not busy working or studying, Amy is an amateur actress. She has performed in several productions and was the drama leader for the Baptist Student Union and a member of the Southern Tech Theatrical Society.
9. Another of Amy's talents is cooking. Her specialties are lasagna and cheesecake.
10. She also enjoys outdoor activities, particularly hiking and rafting.

Ten Good Things We Know About Kathryn Knox

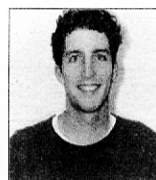


Kathryn Knox

1. Kathryn has been a project coordinator for the FalconView Project with the Information Technology and Telecommunications Laboratory since March.
2. She provides support for the FalconView project, rounding out a team of 10 technical research engineers.
3. Before coming to GTRI, Kathryn worked in sales and sales management and sold "just about everything" from vitamins, health-club memberships and computers to lingerie and designer clothing.
4. Kathryn is an Air Force "brat," never living anywhere for longer than 4 years, and was also in the Air Force herself as a Communications Computer System Operator.
5. While in the Air Force for three years, she traveled a lot, living in Texas, Mississippi, California, Denver and Korea.
6. Kathryn was born in Okinawa, an island off the coast of Japan. Home is Fort Walton Beach, Fla., as that is where she lived the longest and is where her parents are now.
7. Kathryn is single and lives in Gwinnett County.

8. She considers herself mostly a "cat person," however, she is the proud owner of a Rottweiler, Guinness, who is 3.
9. In her free time, Kathryn enjoys creative writing, working out, doing a variety of "Atlanta" things with friends and being outdoors.
10. Writing is her real passion. She pens everything from poetry to novels and movie scripts.

Ten Good Things We Know About Andrew Old



Andrew Old

1. Andrew began working as a graduate research assistant for the Information Technology and Telecommunications Lab (ITTL) in January.
2. He assists David Roberts with work on distributed interactive simulation. Andrew's responsibilities includes helping develop a tool to test simulations for High Level Architecture compliance.
3. Before coming to GTRI, Andrew worked for a health care consulting firm in Monroe, La.
4. Andrew grew up in Houston, Texas, but lived in New Orleans, La., for two years before moving to Atlanta to attend college.
5. A Tech graduate, he completed a bachelor's degree in industrial engineering.
6. Andrew is now working on a Tech master's degree in operations research.
7. He will graduate in December and hopes to pursue a career in simulation.
8. As an undergraduate, Andrew was a member of the Yellow Jacket swim team. He was team captain his senior year, and holds the school record for the 400-meter individual medley.
9. He lives in Smyrna with two roommates and three cats.
10. In his free time, Andrew likes to read, watch television and work out.

Personal Notes

Our Sympathy

...to retiree **George Ewell**, whose mother, Mary P. Ewell, died July 11. George works hourly as needed.

...to **David Brani**, whose father-in-law died in mid-July.

Cradle Roll

Lisa McDonald (MAPS) is an aunt for the 23rd time! Her newest nephew, Jordan Alexander Lucas, was born on May 16.

Rose and Glenn **Hopkins** welcomed a daughter, Mary Danielle Hopkins, on May 25.

CONGRATS
ON YOUR
GREAT
FEAT!



Georgia Tech's PCS One of State's Top Printers

By Toni Mills, OIT

The Office of Information Technology's Printing and Copying Services (PCS), formerly PPC,

brought home two awards this year from the Printing Industry Association of Georgia's (PIAG) 1996 statewide Print Excellence Competition.

PCS won awards of excellence in two categories: Brochures/Pamphlets, for its work on the "Graduate Studies in Mathematics" brochure; and Booklets, for its work on the "College of Computing Course Calendar."

The awards were presented April 12 during PIAG's 1997 "Celebration of Print" gala at Cobb Galleria Centre in April. PCS competed with 29 other companies in Division Two, for firms with six to 35 employees.

PIAG's Print Excellence Competition is the only competition in Georgia that recognizes quality and craftsmanship in the printing industry. The event attracted 1,361 entries from 82 printing companies throughout the state. Each company was placed into one of five divisions based on number of employees or facility function.

A panel of judges issued one best of category (first place) and one award of excellence (second place) award per category. Judging criteria included neatness of impressions, quality and effectiveness of the entire piece, overall visual impact, and the construction and format of the entry.

PCS is the only organized reproduction facility on the Georgia Tech campus, processing more than 6,000 orders annually. For more information about PCS' services, visit <<http://sheba.ppc.gatech.edu/ppc_home.html>> on the Web.

Robin and **Jim Sangston** welcomed a daughter, Amanda Hadley Sangston, on June 14.

Beth and **Mike O'Neill** (ARL) welcomed a second son, Andrew Patrick, on May 5.

Wedding Bells

Carey Floyd's (SDL) son, Chip, married Denise Lyle on July 26.

Get Well Soon!

Our thoughts are with **John Cotton** (SEAL), who is recuperating from open heart surgery. Get well soon, John!

Focus on Folks

Focus on Folks

The GTRI Connector
Vol. 13 No. 9 August 1997

Published by the Research Communications Office, Centennial Research Building, Georgia Institute of Technology, Atlanta, GA 30332. Georgia Tech is a unit of the University System of Georgia. The deadline for submitting copy is the first Tuesday of each month.

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WEB ADDRESS

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This publication is printed in part on recycled paper.

Professional Activities

Electro-Optics, Environment and Materials Laboratory

The Georgia Tech Plasma Programs conducted a seminar and demonstration of the plasma technology for members of the Orange-Wake-Durham County, North Carolina Waste Management Group; representatives from the North Carolina Department of Transportation and the Federal Highway Department; and members of the South Carolina Energy Research and Development Center at Clemson University. Georgia was represented by Sen. James W. Tysinger, chairman of the Science, Technology, and Industry Committee. The Georgia Tech Plasma Technology participants included **Thomas Galloway** and **Lou Circeo** (ARCH), **Orlando Feorene** (Industrial Programs), **John Nemeth**, **Bob Newsom** and **Lamar Carney** (EOEML). Georgia Tech Plasma Programs presentations and demonstrations were conducted in June and July by Newsom, Carney and Circeo for 1) participants in the College of Engineering's Pre-college Engineering Program (PREP), 2) the College of Engineering's Minority Introduction to Technology (MITE) Program (two sessions), and 3) members attending the Mid-South Business Roundtable Quarterly Meeting held July 10-11 at Georgia Tech.

Mark Hodges wrote the cover story for the August-September issue of MIT's Technology Review on the prospects for business on the World Wide Web. The article, "Is Web Business Good Business?" can be read at the magazine's URL: <<http://web.mit.edu/afs/athena/org/t/techreview/www/tr.html>>.

Dan Campbell presented an invited poster on "the Hartman Interferometer" at the Gordon Research Conference on Biosensors in Henker, N.H., the week of Aug. 4.

"Foundations for the Future" representatives from GTRI, **Claudia Huff**, **Dara O'Neil** and **Jeff Evans** (ITTL), presented three technology workshops for 100 Atlanta Public Schools principals at the Leadership Academy Conference in Peachtree City on Aug. 6.

Chris Thompson, **Jennifer Ockerman**, **Larry Najjar** and **Tom McKlin** all presented papers at ED-MEDIA 97 in Calgary, Canada, June 16-20. Thompson participated in a National Science Foundation review panel for the Course and Curriculum Development program of NSF, July 21-24. Thompson and McKlin taught two continuing education courses, Authorware I and II, in Georgia Tech's New Media Center, July 14-18.

Bob Schwerzel attended the Gordon Research Conference on "Clusters, Nanocrystals and Nanostructures" at Plymouth State College July 27-Aug. 1. He presented a poster on "Photochemical Cross-Linking and Nonlinear Optical Properties of Surface-Functionalized Cadmium Sulfide Nanocrystals," which was co-

authored by **James Suggs** and **Jeffrey Moore**.

Kirk Mahan presented a technical paper, "Cost Savings by Pre-Qualifying Maintenance Contractors," to the International Maintenance Conference recently.

Roc Tschirhart presented "Building a 'Partnership' Between a Nonprofit, a For-Profit and a Government Organization When Commercializing Jointly Developed Software" at the July Technology Transfer Society Conference in Denver.

The week of June 2-6 **Vicki Ainslie** and **Myrtle Turner** conducted "Inspecting for Lead Hazards in Residences and Lead-Based Paint Risk Assessment" courses for the U.S. Army Center for Health Promotion and Preventive Medicine, Europe (CHPPM-EUR) Conference Center in Landstuhl, Germany.

Systems Development Laboratory

David Kuechenmeister gave a presentation to the National Aerospace Electronics Conference on real-time airborne threat simulation technology being developed at GTRI. A paper was also published in the proceedings, with co-authors R. Casey Brown, Chris Elliott, Steve Fuss, Mark Juliano and Jeff Sitterle.

Sensors & Electromagnetic Applications Laboratory

Jim Sangston and **Otto Rausch** received "most original" presentation awards at the 1997 IEEE Radar Conference in Syracuse, N.Y.

Personnel News

New Hires

STL welcomes **Mark Brothers**, Administrative Manager; and **David Maybury**, Student Assistant. HRO welcomes **Charles Bosco**, SRS; and **Mark Smith**, Laboratory Technician. SDL welcomes **Bruce Kerkemeyer**, RE II; **Rebecca Rieck**, Student Assistant; and **Roger Steines**, RE I. AO welcomes **Christopher Rundlof**, Student Temp. FSD welcomes **Dennis Saylor**, Accounting Manager I. ELSYS welcomes **George Harrison**, Lab Director; **Kara Johnson**, Student Assistant; and **Stephen Kulik**, Student Assistant. EOEML welcomes **Valerie Belcher**, RE I; **Robert Hendry**, RS I; **Patrick Manigault**, Graduate Temp.; **Annie Pearce**, RE I; and **David Stall**, Student Assistant. ITTL welcomes **Erick Beebe**, Computer Services Spec. IV. SEAL welcomes **Robert Hemphill**, RS I. ARL welcomed **Steven Else**, Professional Advisor and **Mariam Sow**, Administrative Assistant II. SSD welcomes **Robert McGahee**, Maint. Worker II. PST welcomes **Alan Golivesky**, Program Coordinator; and **Kevin Mobley**, Systems Analyst II. RSD welcomes **John Burke**, Security Specialist. Admin. welcomes **Andrea Pendleton**, Receptionist/Secretary.

Moving On

Faisal Ahmad, **William Ballard**, **Benjamin Buchanan**, **Matthew Dinkins**, **Jennifer Hsu**, **Dwight Ingram**, **Han-Song Kim**, **Carol Minn**, and **Carl Scherer** (SEAL); **David Antopolsky** and **Curt Niebur** (AERO); **Evan Haas**, **Timothy Mathis**, **Tami Reed**, **Stephanie Rimbart**, and **Robert Shively** (STL); **Robert Biro**, **Timothy Brosnan**, **Laura Brown**, **Daniel Floyd**, **Jerry Hicks**, **Joselyn Hoffman**, **Gregg Hudock**, **Cornell Lawrence**, **Randall Mandock**, **Calvin Mapp**, **Kelly Paradise**, **Wounjhang Park**, **Susan Phillips**, **Michael Singletary**, **Christen Stoffers**, **Guillermo Villaobos** and **Feng Zhang** (EOEML); **Andrew Bowers**, **Nicola Giberti**, **Matthew Howser**, and **Padma Rao** (AIST); **Michael McKeon** and **Michael Seymour** (SDL); **Vicky Coon**, **Sean Forney**, **Kenneth Merry** and **Donald Scott** (ELSYS); **Cynthia Davis**, **Bruce Harvey**, **Jason Kau**, **Michael King**, **Kevin Mobley**, **Mary Munn**, **Robert Nilsen**, **Kelly Reese**, **William Simcoe**, and **Marcus Smith** (ITTL); **Sally Griffin** (RO); **Walter Griffith**, **Benjamin Hofelich**, **James Langley**, **Larren Murphy**, **Stefanie Sherwood** and **Bert Watkins** (SSD); **Jamie Hollimon** (MAPS); **Kathryn Holwill** (RCT); **Debra Lockwood** and **Mary Wall** (APO); **Amy Mannino** and **Jennifer Sledd** (VPDIR); **Robert Marples** (HRO); **Gina Robinson** (PST) are moving on.

Congratulations!



Paul Cataldi

Paul Cataldi (AERO) a GRA and one of the Shackelford Fellows recently received an AIAA award: the 1997 "Dr. Abe M. Zarem Award for Distinguished Achievement" in the astronautics category. The Zarem Graduate Student Award was established by AIAA and Zarem as a means for students pursuing advanced degrees in aeronautics and astronautics to showcase their talent and work. This award is a result of the paper Paul presented at the National Student Conference in January 1996 at Reno, Nev.: "Transformation of the Syracuse University LICH Tube into a Hypersonic Facility." AIAA will fund him to present this paper in the International Student Conference session at the 48th International Astronautical Congress in Torino, Italy in October. Paul is studying the role of velocity profile shaping.

Correction

ELSYS' new director, George Harrison, is a retired Air Force major general, not a retired Army major general.

