New Model Will Assess Software Engineering Processes

By Joey Goddard, OCA

As computer use in all areas of research and development continues to increase, the process of engineering software has become as important as the software itself. Not surprisingly, the government has established a Capability Maturity Model (CMM) to assess an organization's software development processes.

"Both the government and industry have recognized that the quality of the product you produce often depends upon the processes that created it," says Bud Sears, director of ELSYS. Sears is heading up GTRI's efforts to improve its software processes. "You can tell they are serious about it because they are imposing it on themselves."

The CMM was developed by the Software Engineering Institute (SEI), a federally funded research and development center chartered by the Department of Defense. Along with the model, the SEI has created an assessment process for determining an organization's progress in using the CMM, and an assessor certification program.

To date, SEI is the only organization that can license CMM assessors, although other institutions, including Tech's College of Computing, teach CMM courses. Two GTRI researchers, Andy Register (ELSYS) and Todd Johnson (SDL), have been par-

EOEML's Sheron Meyers, center, met many athletes during her volunteer time with the Paralympics. Here, she's shown just before the Opening Ceremonies. Read about Sheron's Paralympic experiences, and some other colleagues' final Olympic experiences, on page 3. (Photo courtesy Sheron Meyers)

New GTRI Fellows Named

By Joey Goddard, OCA

Three GTRI researchers have been named to the GTRI Fellows Council. **Neal Alexander** (SEAL), and **Nile Hartman** (EOEML) were appointed to the council in June by GTRI director Richard Truly. **Harold Engler** (ELSYS), who has served on the council for the past year filling the remaining term vacated by Devon Crowe, was also appointed to a new term. The council members were chosen through a GTRI-wide nomination processs and subsequent vote by lab directors and current GTRI Fellows.

The new appointees join current council members **Krishan Ahuja** (AERO), **Larry Corey** (SEAL), **Bill Rhodes** (EOEML), **Charlene Bayer** (EOEML), **Ron Bohlander** (ITL) and **Michael Tuley** (STL). All council members serve three-year terms. The newly appointed members will remain on the council until June 1999.

Members of the Fellows Council are selected based on their external recognition, campus collaboration, accomplishments at GTRI and insight into national technology trends and issues. The council administers the GTRI Internal Research Program; assists in technology forecasting and assessment; and works toward campus research collaboration goals. The Fellows Council also makes recommendations directly to Truly.

The council invites comments and suggestions to assist in the continued improvement of GTRI's research programs.

Observed & Noted

Need a reminder of recent changes in the retirement plan? *Margaret Horst (STL) provides it on page 3.*

■

Sheron Meyers (EOEML) volunteered during the Paralympics. *Read about her experiences, and*

a few final Olympic experiences, on page 3.

■

Two SEAL researchers are using their knowledge to address the needs of law enforcement. *Learn about the work of Nick Currie and Bob McMillan on page 4.*

■

Claudia Huff (EOEML) has taken on some new collaboration-related duties. *Find out what she's doing on page 4.*

■

Twenty teams competed in this

summer's aerial robotics competition. *Results appear on page 5.*

■

Two longtime employees recently retired. *Turn to page 6 to read about the contributions Joe Parks (SDL) and Gail Tucker (SSD)*

made at GTRI.

■

This month's issue features five new employees! *Meet them on page 7.*

■

Do you have ideas for GTRI-wide social func-

tions? *If so, turn to page 7 -- Janice Porter wants to hear from you.*

■

The back page is filled with professional activities, news of three babies, a wedding and more. *Flip to page 8 to get the latest news!*

News & Notes

Meet the Administrative Information Systems Team

The Administrative Information Systems Team (AIST), managed by Tom Brown, develops and maintains GTRI's information technology infrastructure. This month we continue meeting AIST employees.

Tony White, a research scientist, has been with GTRI for more than 10 years. He was originally hired as a systems manager/systems analyst for a project in MATD, which is now SEAL. In 1989, he started working with Tom Brown on the project that later developed into AIST. Tony works on PC architecture and networking problems on a GTRI-wide level. Some of his responsibilities include coordinating GTRI-wide networking projects such as Futurenet phases I and II, setting up electronic mail accounts and troubleshooting problems, representing GTRI in meetings with OIT, and researching new information technologies.
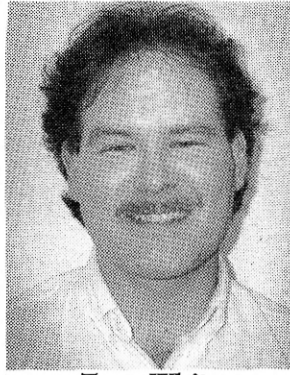
Tony White

He graduated from Tech with bachelor's and master's degrees in computer science. An Air Force "brat," Tony grew up all over the country. He and wife Mary Anne now make their home in Marietta. The two have a daughter, Megan, and recently welcomed their first grandson, Kevin, to the family. When he is not working, Tony enjoys reading science fiction, lifting weights and playing with computers.

Computer support specialist **Quimin Lam** has been with GTRI for four years. He started working with AIST as a co-op and moved into a full-time position after receiving his bachelor's degree in electrical engineering from Southern Tech.

Quimin is responsible for the mainte-

Quimin Lam

nance of GTRI's business and administrative computer systems. "When someone has something wrong with their computer," he says, "I get an emergency call." Quimin and his co-ops respond to problems ranging from "How do I print my e-mail message?" to "My hard drive just crashed!"

Quimin moved to the United States from Vietnam when he was 19. His move was sponsored by relatives in Boston, Mass., where he worked as a machinist. He later moved to Jacksonville, Fla., where he served in the U.S. Navy for three years before moving to Atlanta. Although his work keeps him very busy, Quimin enjoys playing all kinds of sports. He also has the unusual hobby of designing mechanical gadgets for use around the house.

SELECTED JULY 1996 AWARDS

Title	PI/Laboratory	Sponsor	Funded Amount
U. S. Postal Service Helicopter Service	Roglin, R. (AERO)	U.S. Postal Service	$ 57,773
MH-60G Structural Integrity Modifications	Crawford, C. (AERO)	Air Force	377,000
Task A3: Atlanta Short Haul Transportation System	Stancil, C. (AERO)	SAIC	299,804
EC Test & Evaluation Infrastructure Improvement & Modernization	Eagar, W. (ARL)	Air Force	375,352
Electronic Warfare Techniques Analysis/RF	Rogers, W. (ELSYS)	Air Force	138,000
56M ISS LPPCMAC MODS for TRW	Ingle, R. (ELSYS)	TRW Inc.	44,000
End-to-End T&E for Bellsouth.Net, Phase I	Blankenship, S. (ELSYS)	BellSouth Mobile Data Inc.	39,958
Antenna Pattern Data Collection & Vulnerability Assess.	Andrews, H. (ELSYS)	FiberTeck Inc.	62,133
Extended Range Detector Log Detector Amplifier for AM-6639 Advanced Crystal...	Mack, D. (ELSYS)	Air Force	50,000
AIM-9X Digital Missile Model	Hyde, R. (EOEML)	BDM Corp.	75,378
Full Operational Fog Detection & Warning System	Gimmestad, G. (EOEML)	Ga. Dept. of Transportation	1,944,102
Multimedia in Manufacturing Education	Thompson, C. (EOEML)	Nat'l. Science Foundation	199,201
Laboratory Studies of Tropospheric Sulfur Chemistry	Wine, P. (EOEML)	Nat'l. Science Foundation	142,000
Corps SAM/MEADS Cruise Missile Defense Support	Dalton, J. (HRO)	Army	49,696
High Performance Computing Modernization Plan and Allocation of Assets Study	Hilderbrand, T. (ITL)	Army	66,537
Leveraged Manufacturing Tech. for DoD Tactical Systems	Bohlander, R. (ITL)	Army	297,086
Large Area Manufacturing of Microjet Cooling Devices	Bohlander, R. (ITL)	Army	69,998
Optoelectronics Demonstrations for Tactical Army Systems	Bohlander, R. (ITL)	Army	259,990
Project 50013	Wilson, B. (ITL)	Army	430,000
IBIS Ernest	Wilson, B. (ITL)	Army	1,345,639
Transceiver Susceptibility Analysis	Moss, R. (ITL)	Army	60,000
System Engineering Support to Comanche Program	Grover, J. (ITL)	Rail Co.	48,988
Waveform Simulator Missile Impact Study Support	Kerr, R. (SDL)	Lincoln Laboratory	319,586
Radar Simulator & Seeker Support	Williams, A. (SDL)	Army	105,912
Support of Pod-Mounted Seeker Relocation Program	Cochran, H. (SDL)	Air Force	50,000
Advanced Algorithms for UAV Detection of Moving Targets in Sea Clutter	Barnes, C. (SEAL)	Navy	50,000
BCIS EMID Support	VanderMeer, W. (SEAL)	FiberTeck Inc.	90,170
BCIS Tech Base Support	VanderMeer, W. (SEAL)	FiberTeck Inc.	66,805
Naval Radar Electronic Protection Assessment Analysis	Morris, G. (SEAL)	Air Force	173,151
Army Radar Electronic Protection Assessment Analysis	Morris, G. (SEAL)	Air Force	375,000
Non-Cooperative Target Identification (NCTI) Technology	Cohen, M. (SEAL)	Air Force	340,000
Extending the Utility of the IR Measurement Range	Swarner, W. (STL)	U.S. Dept. of Defense	62,038
Models and Simulation	Meadors, J. (STL)	U.S. Dept. of Defense	771,503

Retirement Plan Update

By Margaret Horst (STL)
Outgoing Chair, Faculty Benefits Committee

The Georgia State Legislature passed a bill (HB 173) this year that increases the employer contribution to the Regents Optional Retirement Plan (ORP) from the current fixed rate of 4 percent of the employee's salary to a new floating rate that is equivalent to the employer contribution toward the "normal retirement" of employees in the Teacher Retirement System (TRS). That rate changes every year and is currently (7/1/96 - 6/30/97) equal to 7.42 percent. The legislation also provides that the employer contribution to ORP will not fall below a minimum of 4 percent, but otherwise will change every year with the TRS rate change. The effective date for the new employer contribution to ORP is January 1, 1997. There will be no change in the employee contribution.

"The new contribution rate should help make Georgia Tech more competitive with other higher education institutions" in the recruitment of top quality faculty members, said John Grovenstein, benefits manager in Tech's Office of Human Resources.

As a result of other legislation, the Board of Regents is now authorized to offer mutual fund investment options to ORP participants.

"A committee is currently evaluating different mutual funds with a goal of having a slate of three additional funds to be added to the current TIAA-CREF and VALIC options," Grovenstein said, giving faculty a total of five different fund families from which to choose. In the current timetable, the Board of Regents hopes to have the options available in calendar year 1997.

TRS members will be interested to know that the legislature's retirement committee considered a bill allowing unused sick leave to be added to the "years of service" used to calculate TRS retirement benefits. The bill died in committee this year because of a lack of funding. According to Andrew Harris, Georgia Tech's legislative liaison, "There is strong legislative support for a bill of this type. You can be sure that it will be considered again in the next legislative session."

If you have questions about your retirement plan, contact John Grovenstein, benefits manager, in the Office of Human Resources, at 404-894-8374 or send e-mail to john.grovenstein@ohr.gatech.edu.
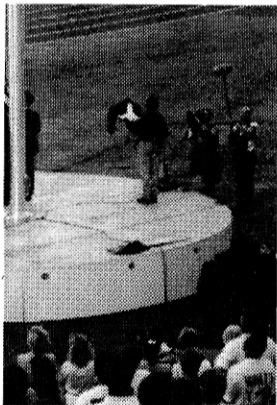

Our Paralympic Experiences

By Lea McLees, RCT

Sheron Meyers (EOEML) was a driver during the Paralympics. She met the head of the Belarus Paralympic delegation, who gave her a beautiful hardcover book about that country's Paralympic and Olympic efforts — and autographed his picture inside it! An Iranian athlete in a wheelchair unexpectedly presented her with a souvenir piece of his country's currency after she helped him. Sheron also met the head of the Atlanta Paralympic Organizing Committee.

Sheron says Paralympic volunteers were made to feel incredibly appreciated and valued, and her most memorable experience illustrates that feeling. Near the end of the Paralympics closing ceremonies, Sheron entered the field area through the opening where the athletes also were passing. A little girl, maybe 8 or 9 years old, reached out in front of her suggesting that Sheron "autograph" her Paralympic games fan — many people were getting the athletes' autographs.

"I looked at the little girl and said 'I am not an athlete, I am just a volunteer,' Sheron said. "The child's mother repeated what I had said to her both verbally and signing — the little girl was hearing impaired. The child then handed her fan to me again — I signed it and requested that the mother thank her daughter for asking."

Sheron hopes to volunteer at the Sydney, Australia Paralympics, October 14-24, 2000.

Izzy Lives! More Olympic Experiences

Jennie (RSD) and **Duane** (SEAL) **Tate** were in China in August, after the Olympics. While there, they visited the Great Wall. An ice cream cart at the wall was decorated with a poster of Izzy, the Olympic mascot, and included some Atlanta information printed in English and additional words printed in Chinese...

...**Doug Coleman** (Mailroom) met President Bill Clinton and the First Lady, Hillary Clinton, in the Olympic Village. Doug had delivered some mail to the Georgia Tech Post Office. He joined some U.S. volleyball players who were waiting for a glimpse of the President, and before he knew it, he was shaking hands with the Clintons...

...**Dale Nordin** (SDL) was a driver for the guests of the Swedish Olympic Committee (Sveriges Olympiska Kommitee) during the Olympics.

"My wife and I belong to a national Swedish Fraternal Organization with a local lodge in the Atlanta area," Dale explained. "I was contacted about driving, and after receiving a leave of absence, decided to drive. I also speak fluent Swedish, as my parents came from Sweden and my wife was born in Sweden."

Dale drove the visitors to all the venues where Sweden participated, including the International Horse Park, the Tennis Complex, and the Olympic Stadium. He also took them shopping at North Point Mall, to the Martin Luther King Jr. Historic Site and to the Cyclorama.

"I was also invited to a reception for the King and Queen of Sweden at the Atlanta Country Club," Dale said. "The prince and princess were also there with them."

Top: Jennie Tate (RSD) shot this photo of Izzy on an ice cream cart poster at the Great Wall of China after the Olympics in August. (Photo by Jennie Tate)

Middle: A bald eagle flew into the Centennial Olympic Stadium during the Opening Ceremonies for the Paralympics. (Photo by Sheron Meyers)

Bottom: Paralympic athletes prepare to board buses in the A-18 lot across from the Baker Building. (Photo by Sheron Meyers)

This computer graphic shows what a machine tested at the L.A. County Correctional Facility sees when it uses a mild X-ray to scan for concealed weapons. The darker spots on the body show where the subject is carrying metal objects. A gun is visible in the second panel of the graphic, on the subject's left hip. (Photo courtesy Nick Currie and Bob McMillan)

Currie, McMillan Apply Research to Help Law Enforcement
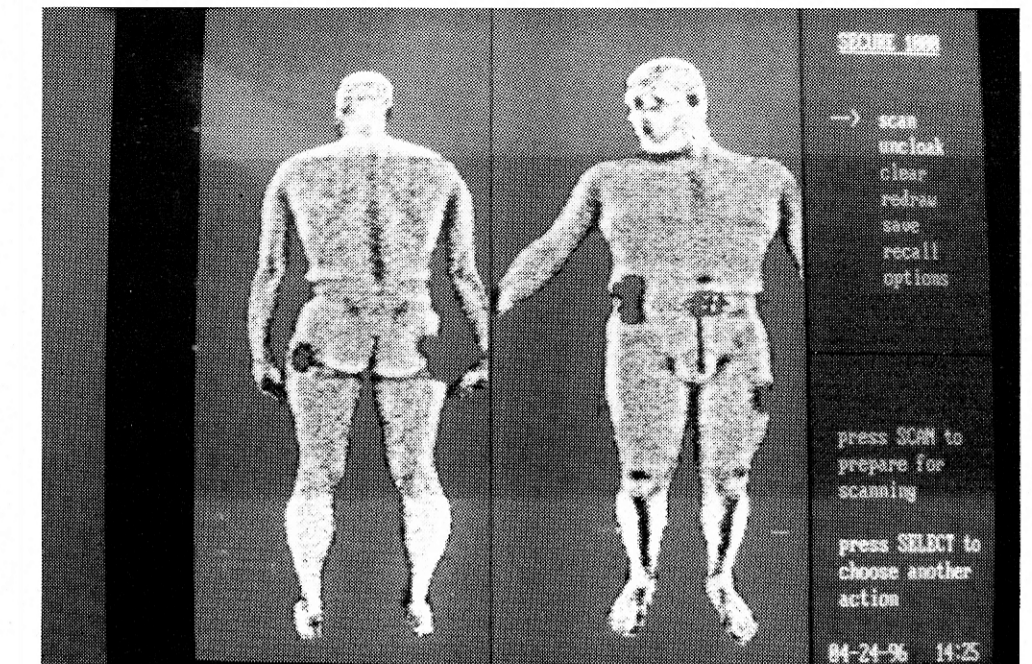
By Joey Goddard, OCA

Two GTRI researchers have teamed up with local, state and federal law enforcement groups to help fight the war on crime.

Nick Currie and Bob McMillan (SEAL) are working at the National Law Enforcement and Corrections Technology Center (NLECTC) which opened during June in Rome, N.Y. The center, funded by the National Institute of Justice (NIJ), is one of four regional centers and one of eight offices nationwide that works with the law enforcement and corrections community.

Research at the NIJ-funded centers addresses operational requirements for law enforcement groups and development of new or improved technology solutions for law enforcement problems. They also provide assessment of law enforcement products, information, standards and testing.

Each of the four regional centers serves as a point of contact for law enforcement professionals within its region, and concentrates on a specific area of research. The Rome center, which is located in conjunction with the Rome Laboratory at the former Griffiss Air Force Base, is concerned with developing sensors, information technology, intelligence exploitation, communications and command/control.

Currie and McMillan became involved with the NLECTC through their work with The Defense Advanced Research Projects Agency on a related project. That work has become one of the center's key programs.

"The technology related to concealed weapon detection (CWD) has applications to military special operations such as Bosnia and Haiti, as well as to law enforcement," Currie said.

Researchers at the NLECTC are experimenting with passive, active, imaging and non-imaging sensor technologies to detect weapons hidden under a person's clothing.

Weapons can be detected using using X-rays, infrared, millimeter wave, magnetic and acoustic sensors, Currie explained.

"No single one of these methods is perfect in every instance," Currie said. "For instance, infrared sensors have better imaging capability than millimeter-wave sensors but have trouble penetrating clothing. The challenge is to take what is most useful from each of these technologies and optimize signal and data processing for specific situations."

One of the systems designed at the NLECTC is being evaluated by the Los Angeles County, Calif., sheriff's office. The device uses a low-powered X-ray and computer imaging to scan individuals for concealed weapons. It is currently being used to test inmates entering the L.A. County North Correctional Facility.

Currie sees this partnership as one of the biggest advantages of the NLECTC.

"Having input from law enforcement agencies makes our research that much more valuable," said Currie. "Not only can they tell us if something works, but they can tell us if it is useful to them."

Currie's direct involvement with the center ends in September when his two-year appointment as an Intergovernmental Personnel Act (IPA) Visiting Scientist at Rome Laboratory expires. He said he plans to continue working at the center as needed. McMillan will continue at Rome Lab as an IPA Visiting Scientist for another year.

Claudia Huff congratulates R. Guy Vickers, SECME executive director, for winning the highest U.S. award given in minority education: The Reginald H. Jones Distinguished Service Award. SECME, the Southeastern Consortium for Minorities in Engineering, is located at Georgia Tech. (Photo by Joey Goddard)

Huff Begins HBCU/MI Duties

Claudia Huff, senior research associate in the Electro-Optics, Environment, and Materials Lab (EOEML), has been named the new coordinator for Historically Black Colleges and Universities and Minority Institutions (HBCU/MI).

As HBCU/MI coordinator, Huff will work with GTRI and academic faculty to identify contract development opportunities for Georgia Tech to pursue jointly with HBCU/MIs.

"The nature of our work means that we have to do more with less," she said. "In these times of shrinking resources, it's important that we team up with the right folks."

Huff, who earned a master's degree in African American Studies from HBCU Atlanta University (now Clark Atlanta), said that collaboration with HBCU/MIs is the most efficient and effective use of talent.

"Instead of competing, we need to be creative in pooling our resources," she said. "Today's challenges require multiple perspectives and multidisciplinary skills.

We've outgrown the days of individual awards to individual institutions."

One of Huff's goals as HBCU/MI coordinator is to get more junior faculty to work with her in developing relationships with HBCU/MIs.

"We need the involvement of younger researchers so there will not be gaps in our interactions," she said.

Huff invites anyone interested in teaming with an HBCU/MI to contact her at 404-894-3941 or claudia.huff@gtri.gatech.edu.

CMM *From page 1*

ticipating in courses at SEI to become certified as assessors.

"Obviously GTRI is very good at creating the product. But what we're trying to determine is the process for creating that product," said Register.

The CMM addresses software practices for organizations at various levels of maturity. Capability maturity refers to how stable and institutionalized the process to develop software is in any organization. There is no set of plans or procedures to follow. Each organization is tasked to determine what works best for it based on the knowledge, training and experiences of the staff and management involved in software development.

"In this sense, the term "model" is a misnomer," said Myron Cramer (ELSYS). "The CMM was designed to be an evaluation tool, rather than a blueprint for software engineering."

Cramer is the chairperson of the Software Process Working Group which was established to make recommendations on the short-term steps that GTRI needs to take in evaluating its software processes.

CMM

The group performed an informal assessment of about 50 participants from six GTRI laboratories in February to determine where GTRI falls with respect to CMM requirements.

"Although this assessment in no way represents all of GTRI, it does give us a direction to focus our efforts," Cramer said. "In many cases, the fact that you are looking for ways to improve makes the evaluation worthwhile."

The maturity model has five levels:

• First is the **initial** phase, where the organization examines processes already in place. In this phase the model will have no effect on an organization. The goal is establishing what the software development process is and documenting it. After this step, the organization should be able to identify which areas require improvement. "The initial phase focuses on work standards, return on investment, and productivity," Register said.

• In the second, or **repeatability**, phase, the organization has at least one individual or project team that knows the development process and follows it each time.

• The third phase is known as the **defined** phase. This means that the process is defined, or standardized, across the organization, at the branch level or higher. "Here the process might require minor tailoring from project to project," Register explains, "but for the most part everyone in the organization knows what the process is and is using it."

• When an organization reaches the fourth phase, called the **managed** level, they have begun setting quality goals for both process and product. Data is collected to keep track of goals which are gauged using a stabilized set of measurements.

• The final phase is the **optimizing** level. At this stage the process is again examined for strengths and weaknesses. A cost-benefit analysis can be done for each aspect of the process to determine areas that need improvement or revision.

"The point of the CMM is to continually improve," says Register, "You may reach level five, but you'll never stop progressing."

Reaching level five maturity will take a number of years and will vary among labs, Sears said.

"Each lab has its own requirements and the approach of each will be different. Some groups will be able to move up faster than others," Sears said. "The important thing is improvement. Hopefully, over time the good processes will spread throughout the organization, making growth easier for all of us."

Added Cramer: "One of the fears is that developing a process will add to the bureaucracy. But if that were true, this would not have been embraced by industry as it has been.

"We expect to keep growing in the area of software production," he said. "The CMM is good for helping us manage the work we have, while keeping us on track for the future."

Twenty Teams Enter Aerial Robotics Competition

By Joey Goddard, OCA

While countries from around the world gathered in Atlanta to compete in the 1996 Summer Olympics, a different type of competition was taking place in Orlando, Fla., at Disney's EPCOT Center.

Twenty teams from universities in the United States, Canada and Europe entered the 1996 International Aerial Robotics Competition. The competition is usually held on the Georgia Tech campus, but due to preparations for the Olympics, it was conducted at EPCOT as part of Disney's "Space Week" celebration.

This year the competition was co-sponsored by the Association for Unmanned Vehicle Systems, the U.S. Department of Energy (DOE), and various corporations, most of which are members of the Georgia Tech Corporate Liaison Program. The real world mission the teams were tasked with was to build a robot which could fly over a simulated toxic waste dump and map the location of fully exposed and partially buried barrels. The robots then had to identify the contents of the barrels by reading their labels and conclude the mission by taking a sample from one of the barrels.

"This mission really has practical applications and is of real interest to the DOE," explained Rob Michelson of AERO, the competition organizer. "There are thousands of toxic waste dumps for which records either no longer exist or are incomplete. The job of identifying the contents of these dumps is often dangerous work for humans and is better done by machines."

The team from the Massachusetts Institute of Technology (MIT) took home top honors this year, completing the mapping and identification portion of the mission six times in an hour. While some of the other teams were able to map the site or to identify the barrels, no other team was able to complete as much of the mission and none of the teams was able to retrieve a sample. For its efforts, the MIT team received $7,500 of the $10,000 prize.

The Georgia Tech team was forced to drop out of the finals because of a computer problem which made its robot unable to fly.

Each autonomous flying robot entry had one hour to complete the mission.

"The vehicle has to know where it is and correct for things such as wind speed and direction," said Michelson. "To be fully autonomous, it cannot have any input from an operator while flying."

Teams also were judged on a technical paper documenting their project and best team T-shirt design.

In previous competitions, the robots had to fly autonomously, pick up a metal disk from one bin, fly over a barrier and deposit the disk into another bin. Last year, Stanford University was the first team to accomplish this task. That led to some changes in strategy in this year's competition.

"In 1995, Stanford successfully demonstrated advanced use of GPS (Global Positioning Satellite) navigation in their entry," Michelson said. "Because of their success, everyone incorporated GPS into their designs this year."

Michelson said that he was impressed with the improvements competitors have made since the competition began.

"The first year, just being able to fly was good. Then the teams learned how to navigate. Each year the standard moves higher," he said.

The popularity of the contest grows every year, due in part to media attention from scientific publications and on television shows such as "Scientific American Frontiers" and "Discovery." Michelson, who is the past president of the Association for Unmanned Vehicle Systems, said that although everyone enjoyed their trip to EPCOT Center, he anticipates the competition will move back to Georgia Tech next summer. The date for next year's competition has not yet been finalized.
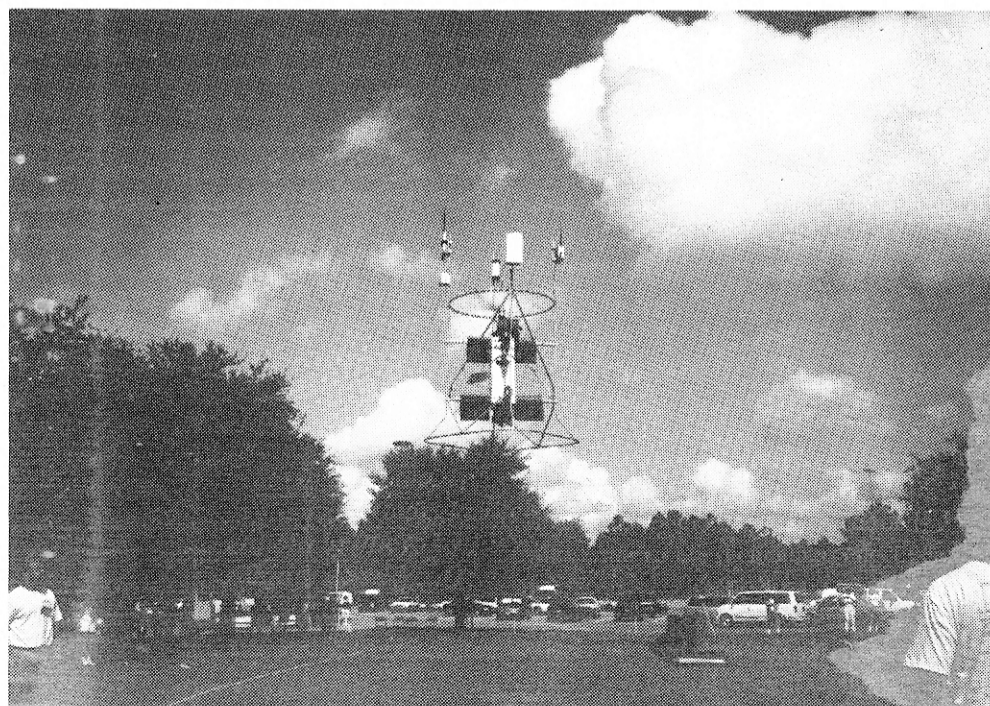
This vehicle was among 20 competing at Epcot in the International Aerial Robotics Competition. (Photo courtesy Rob Michelson)

Joe Parks, center, chats with George Ewell during Parks' retirement reception at Cobb County. (Photo by Dayton Funk)

Parks Retires After 18 Years of Service

By Joey Goddard, OCA

GTRI said good-bye and thank you to a good friend in June.

Joe Parks, director of the Systems Development Laboratory (SDL), was honored at a retirement reception celebrating his 18 years of service to GTRI.

During Parks' career he worked as a project engineer for General Electric and Sperry Rand, and then spent more than 10 years as a program manager for Scientific Atlanta. He came to GTRI in 1978 as the Acting Chief of the Defense Electronics Division, and was eventually named director of the Threat Systems Development Laboratory, which became the Systems Development Laboratory (SDL) in 1993. Under his leadership, the Defense Electronics Division was awarded two of the largest radar development programs in the history of GTRI.

"Joe was a major contributor to the growth of GTRI into a $100 million a year business," said Gerald Smith, who leads enterprise strategy at GTRI, at Parks' June 27 retirement reception.

Smith also noted that much of Parks' success as the principal contract developer for SDL resulted from his concern for the customer.
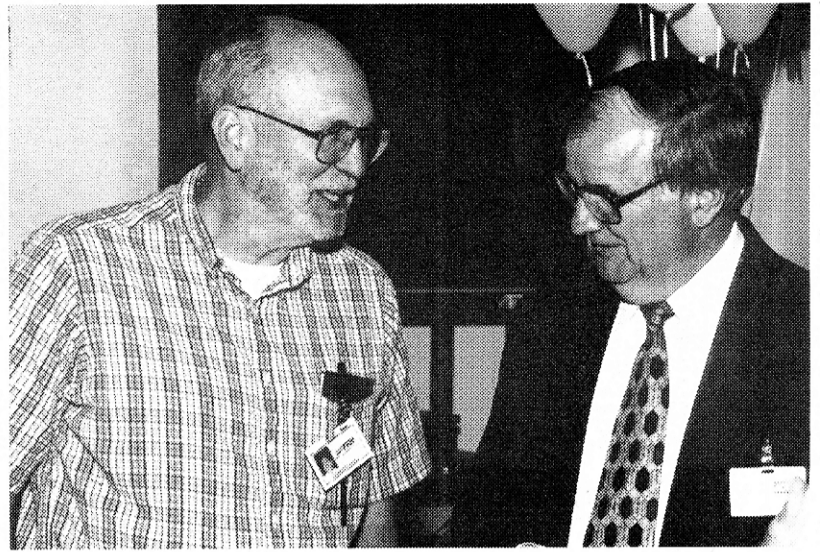
"In an age when many companies are learning how important it is to keep the customer happy, Joe has been doing that for years and years," said Smith.

Parks graduated from Tech in 1961 with a bachelor's degree in physics. He attended graduate school at the University of Florida and later earned a law degree from Woodrow Wilson College of Law. Throughout the years, his law degree has been a source of humor to Parks and his colleagues.

Charles Wilson, associate director of SDL, joked, "I have collected all of Joe's lawyer jokes on tapes that are in my office, but I don't have a wheelbarrow big enough [to bring them over here]."

About 150 people attended the reception, which was planned and organized by Carey Floyd, administrative coordinator in SDL. Helping her with the preparation were Judy Parks, Kay Lindsey and Teresa Hunton of SDL, Cheryl Lilly of ELSYS, and a former employee, Violet Buck.

Parks was also recognized for his commitment to his employees. As director of SDL, he managed more than 100 technical and support people in five branches, as well as an annual budget of about $15 million. SDL employees expressed their gratitude for Parks' support and encouragement through the years by presenting him with a Georgia Tech watch at the reception.

"The most important thing we appreciate about Joe is his concern for the people in his lab as individuals," Wilson said.

Floyd agreed.

"Joe was wonderful to work with," she said. "He was always pleasant to be around and he always had his employees best interests at heart."

Parks said he plans to keep very busy during retirement. He will work as a consultant to GTRI, as well as practice corporate law part-time. He also will do his share of relaxing and playing golf.

"We will all miss Joe's sense of humor and his good nature. He will be hard to replace," Floyd said.

Gail Tucker, second from right, visits during her retirement reception with nephew Alan Morrison, left; sister-in-law Jeannine Morrison; and mom Oga Morrison. (Photo by Lea McLees)
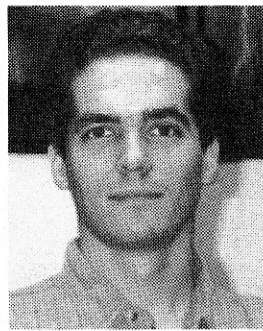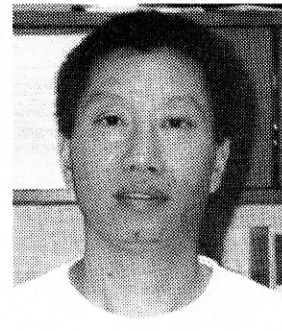
Gail "Mother" Tucker Retires After 22 Years

By Lea McLees, RCT

The generation of us who were taken under the wing of Gail "Mother" Tucker must make it on our own these days.

Gail retired in May after 22 years of taking care of business — and of us.

"She has been a friend to all and a mother to many, and she's a joy to be around," said Evan Chastain, director of Support Services, at Gail's May 30 retirement reception.

More than 60 people attended the reception, including Gail's mother, Oga Morrison; her sister-in-law, Jeannine Morrison; and her nephew, Alan Morrison.

Gail began work at Georgia Tech's physical plant in 1974 and soon came to GTRI, providing integral support to many GTRI leaders.

"She built the careers of many executives at GTRI," Chastain said. "Gail will always help – not just the people she reports to, but anybody."

Gail began work as a secretary and later became an administrative assistant. She assisted Devon Crowe, the late Walter Cox and the late Bob Shackelford when each was the director of what is now EOEML, and also assisted Crowe when he served as GTRI's chief scientist. Gail also worked with Jim Wiltse and the late Jim Gallagher. Most recently she worked with Chastain and supported the GTRI Fellows Council.

"Shackelford once told a reliable source, 'Gail Tucker is the best secretary I've ever had'," Chastain said.

One of her more unusual assignments was handling arrangements and editing the digest for three world conferences Georgia Tech hosted in China. Gail attended two of the conferences, and had an adventure coming back from one of them. She and her daughter lost their seats on a flight, and spent the night in the Hong Kong airport.

Gail also has helped HRO employees over the years.

"Dick [Stanley] called and kept me up way past my bedtime telling me about Gail," Chastain said. They [HRO employees] were having trouble getting their paychecks, which were supposed to be mailed two days early, but often were not," Chastain explained. "Gail personally went to the then Georgia Tech Vice President for Business and Finance and negotiated a solution to send the checks ahead by Fed Ex, and then have them held for distribution on the appropriate day."

Gail got things done — and she went beyond the call of duty taking care of colleagues. She made sure Huntsville co-op students had their paperwork done — and cookies to eat — and did the same for the GTRI Fellows Council.

Gail also kept us laughing. During an EOEML reorganization, Gail called together the secretaries and put together an organizational chart, with herself as lab director. Once Stan Halpern (EOEML) got out of a car Gail was driving, so he could retrieve something from the road. Gail, oblivious to his departure, drove off without him.

Now that she's retired, this accomplished pianist is playing for her own enjoyment and spending time with friends and family. She also says she's working on her book — which is why she didn't tell many stories at her reception.

"I don't want to say much, because most of what I want to say is going to be in my book," Gail said. "Just send money. How much I get from each of you will determine how much about you is in the book!"

She also thanked everyone for seeing her off.

"I appreciate your being here — you have been such good friends," she said. "But I'm not gone forever — I understand I get a lifetime parking pass!"

Yi Ding   Janis Roberts   Brian Barnes   Todd Deterding   Wusheng Tong

GTRI Greetings

Welcome to some of our newest employees!

Ten Good Things We Know About Yi Ding

1. He is a research engineer in AERO.
2. A GTRI employee since November 1995, Yi's research involves creating environmentally friendly transportation.
3. He is currently working on a hybrid electric vehicle which has zero emissions, as well as battery and fuel cells.
4. Yi attended the University of Science and Technology (UST) in China.
5. While there, he earned a bachelor's degree in physics, a master's degree in electrical engineering and a Ph.D. in materials science engineering.
6. Yi also worked as a lecturer and did research at UST.
7. He left China in 1991 to pursue research in France.
8. Before coming to the United States, Yi worked for the Centre Nationale de la Recherch Scientifique (CNRS), a scientific research association in France.
9. He lives in Home Park with his wife, Tong Shi, and his two sons, Ke, 5, and Michael, 1.
10. When he is not busy with work, Yi likes to play basketball and read.

Ten Good Things We Know About Janis Roberts

1. Janis has worked for GTRI since March as a research scientist in ITL.
2. One project she works on is a network linking law enforcement officials in southwestern border states. Janis is helping to develop the user interface for this system.
3. Although she was raised in West Palm Beach, Fla., Janis decided to attend the University of Oklahoma in Norman, Okla., after being awarded a scholarship there.
4. While there, she earned bachelor's and master's degrees in physics.
5. This is actually Janis's second career. Before coming to GTRI, she spent 17 years as a nuclear engineer.
6. She moved to Atlanta four years ago, when her husband, David, was transferred to Fort McPherson.
7. "I decided to take advantage of living near a great school like Georgia Tech," Janis said. So she went back to school to get a master's degree in computer science.
8. David, who has always been a great cook, is now retired and in charge of the house.
9. Janis and David live in Buckhead, where they were in close proximity to the Olympic marathon and bike routes.
10. When she's not working, Janis spends almost all of her free time playing golf or bridge.

Ten Good Things We Know About Brian Barnes

1. Brian has worked as a research engineer in ITL since March.
2. He is currently developing the threat overlay manager in strategic flight planning software after having completed the introduction of threat terrain masking algorithms to the system.
3. Brian has worked as a graduate research (electro-optical encoding) and teaching assistant (digital networks, passive circuits and microcomputer design); as an intern for the Army Corps of Engineers; as a xerography machine technician; and as a radio and television repairman.
4. Brian also has created numerous software applications including a fractal generators, digital signal processing software, database design and graphical user interface design.
5. A Ph.D. student in electrical engineering, Brian transferred to Georgia Tech from the University of Louisville because that school did not offer a Ph.D. program in Brian's specialty, computer engineering.
6. While at Louisville, he graduated with high honors with bachelor's and master's degrees in electrical engineering.
7. Brian also attended Electrical Technology Vocational School in Louisville, Ky., where he won first place in the regional and state VICA Electrical Design Competitions.
8. Brian grew up in Louisville, but now lives in Midtown.
9. His favorite hobby is computers. He writes software in his spare time.
10. When he's not working or studying, Brian also likes to lift weights and work out.

Ten Good Things We Know About Todd Deterding

1. Todd has worked as a research scientist in EOEML since April.
2. He assists with research on plasma applications and hazardous materials.
3. A Tech graduate, Todd earned a bachelor's degree in physics in 1994.
4. He is now working on a master's degree in health physics at Tech and hopes to graduate sometime in 1998.
5. While getting his bachelor's degree, he worked as a student assistant in the communications branch of EOEML.
6. Before coming to GTRI, Todd spent a year working on a cruise ship. He sailed along the west coast from Alaska to the Caribbean. Along the way he had many adventures, including sleeping on a park bench on the dock in Sausalito, Calif. Todd says the view of San Francisco at dawn is breathtaking!
7. On the ship, Todd met his girlfriend, Stephanie. The two plan to be married next March in her hometown of St. Louis, Mo.
8. Most of Todd's family lives in Cedartown, Ga., where he grew up. Todd now makes his home near Peachtree Creek.
9. Todd says that he finds having a lot of free time boring, so he keeps himself busy working on his condominium, watching movies, reading, and collecting CDs.
10. He also enjoys playing the guitar and listening to music.

Ten Good Things We Know About Wusheng Tong

1. Wusheng is a research scientist for the advanced materials technology branch of EOEML.
2. He specializes in developing thin-film phosphor materials using the molecular beam epitaxy growth technique.
3. His research will be used for next-generation, high-resolution, full-color, flat-panel displays.
4. Before he began working for GTRI, he worked as a graduate research assistant for four years.
5. Wusheng received his Ph.D. in physics from Georgia Tech in June.
6. In 1992, Wusheng graduated from Tech with a master's degree in electrical engineering.
7. Born in the People's Republic of China, he has a bachelor's degree in electrical engineering from Anhui University there.
8. In China, Wusheng worked as a research engineer for the Seismological Bureau in Anhui for 10 years. His work involved measuring the electromagnetic pulses emitted from the earth prior to an earthquake.
9. He lives in Atlanta with his wife, Limin Cui, and his 14-year-old daughter, Sarah.
10. In his free time, Wusheng likes to work on his car, play ping-pong and watch movies.

Do You Have Celebration Ideas?

Because of special activities during this summer and other business at hand, no plans will be made for a GTRI Fall Festival. The 1995 festival was a success — but other options might be equally enjoyable. If you have suggestions or comments on future GTRI-wide social functions, you may call Janice Porter at 894-5834, or send e-mail to janice.porter@gtri.gatech.edu. She'd like to hear from you!

Focus on Folks

Professional Activities

Electronic Systems Laboratory

Dennis Folds and **Debbie Mitta** presented papers at the International Conference on Human Aspects of Advanced Manufacturing and Hybrid Automation in Maui, Hawaii in August. Folds presented "Applying Operator Role Theory to the Function Analysis Process." Mitta presented "Automation Issues in ITS-Level Traffic Management Centers."

Electro-Optics, Environment and Materials Laboratory

The leadership of the EPA-funded five Hazardous Substances Research Centers met July 28-30 in Annapolis, Md. to refine their strategic plan for the next five years. The meeting was planned and facilitated by **Leigh McElvaney**, **Nancy Davis** and **Claudia Huff**.

John Nemeth, director of the Environmental Science and Technology Program, presented an invited paper, "The Hazardous Substance Research Centers: Innovative Research and Cost-effective Cleanup," at the Third International Symposium on the Environment and New Technologies — "Soil Protection and Remediation" Metatechnics '96. The symposium was held in Bordeaux, France, Sept. 17-20, and continues under the aegis and sponsorship of Georgia Tech and the University of Bordeaux I. Nemeth's paper discusses the successes in soil and sediment remediation accomplished by researchers from 27 member universities in the five U.S. EPA centers nationwide. Georgia Tech is a member of the South and Southwest Center, which also includes Louisiana State University as lead institution, and Rice University. Nemeth is a co-director and director of training and technology transfer-HSRC S&SW. The U.S. EPA center director asked Nemeth to help present the results of the center's $5 million per year research to national and international audiences.

Bob Schwerzel attended the International Symposia on Fiber Optic Sensors and on Organic and Polymeric Nonlinear Optical Materials at the SPIE Annual Meeting in Denver, Colo. Aug. 5-9.

Leigh McElvaney and **Nancy Davis** presented a paper, "Rewarding Technology Transfer and Outreach at Universities and Overcoming Institutional Barriers: A Meeting Hosted by EPA's Hazardous Substance Research Centers," at the 21st Annual Meeting of the Technology Transfer Society, July 21-23, in Cleveland, Ohio.

Paul Middendorf made two presentations at the Annual National Consultation Conference held in Clearwater, Fla. July 29-Aug. 1: "The Role of Consultation in the Silicosis Special Emphasis Program" and "Consultation Issues in OSHA Redesign Efforts."

The Plasma Application Research Facility hosted four Russian visitors (three scientists and an interpreter) and one engineer from Estonia for three weeks in June. The visitors worked in Research Area II. Their visit was made possible by an Education, Research and Development Association (ERDA) of Georgia Universities contract. The Russians and the Estonian helped **Lou Circeo** (ARCH), **Bob Newsom**, **Lamar Carney** and **Todd Deterding** install, evaluate and establish a Plasma Induction Cold Crucible Melter (PICCM) for the Department of Energy and Savannah River Site. The plasma facility is part of the Construction Research Center directed by Lou Circeo, and is managed by Newsom. A return visit is being planned this fall to complete installation and to demonstration of the PICCM's operational process.

Information, Technology and Telecommunications Laboratory

In August, **Fred Cox** presented an invited tutorial on Behavioral Modeling in XSPICE at the IEEE's Fifth Workshop on Computers in Power Electronics. The workshop was held at Portland State University in Portland, Or. and focused on the special challenges in modeling and simulation of power electronics, such as power converters and switching power supplies.

Aerospace & Transportation Laboratory

At the invitation of NASA's High Speed Civil Transport Nozzle (HSCT) Design Team, **Krish Ahuja** joined a 10-person peer review committee to provide future directions for the HSCT Nozzle Design program.

Personnel News

New Hires

AERO welcomes **David Antopolsky**, Student Assistant; **Ryan Christie**, Student Assistant; and **Jose Santana**, Student Assistant. ELSYS welcomes **Suzanne Bailey**, Student Assistant; and **Dustin Wynn**, Student Assistant. SEAL welcomes **William Ballard**, Graduate Temporary; **Jenfeng Li**, Graduate Research Assistant; and **Wendy Loihle**, Administrative Assistant. EOEML welcomes **James Demmers**, Research Scientist II; and **Hugh Gaston**, Student Assistant. STL welcomes **Steven Brakke**, Research Engineer I; and **Jimmy Roden**, Research Engineer I. APO welcomes **Ann Jaudon**, Administrative Assistant I. HRO welcomes **Daniel Parker**, Senior Research Associate. ITL welcomes **David Roberts**, RS II; **Giorgio Casinovi**, SRE; **Harold Breau**, SRS; **Lester Davis**, Student Assistant, **Nathan Smith**, Co-op; **William Simcoe**, Co-op; **Tanah Barchichat**, Co-op and **Kevin Brown**, RE I.

Moving On

Aaliyah El-Amin (PST); **Katherine Fox** (EOEML); **Mayuresh Patil** and **Debra Richardson** (AERO); **Andrew Slack**

(ELSYS); and **Ingrid Maria Hybinette** (ITL) are moving on.

Transfers

J. Alan Freeland transferred from SDL to ELSYS effective July 1.

Garry L. Cheshire transferred from SDL to ITL effective July 1.

Personal Notes

Cradle Roll

Regina and **Lou Haller** (SEAL) welcomed a son, Bennett Louis, on Aug. 28.

John Gibbons (ELSYS) welcomed a granddaughter recently.

Forest Williams (RSD) welcomed a grandson, Joseph S. Evans II, on Aug. 14.

Congratulations!

Russell Wood, 12, son of **Kim Wood** (Arlington Lab), pitched for the AAU baseball team that won the Virginia State Silver Medal. The team, called the Virginia Jazz, entered the national competition in Minnesota in August and placed fifth out of 50 teams.

Wedding Bells

Diane Wininger-Smith (EOEML) married Gregory Knobloch on Aug. 7.

Our Sympathy

...to **Mike Sorenson** (SDL) upon the death of his mother-in-law.

Robinson Takes on Web, Writing Duties

A familiar face is taking on new duties on the Research Communications Team (RCT).

Rick Robinson

Rick Robinson, who formerly worked as an RCT graduate student assistant, has been hired full-time to develop GTRI's web pages and write about Georgia Tech research for the Web, news releases, *Research Horizons* and the *Connector*.

He has more than 11 years experience in journalism. He holds a bachelor's degree in English from Columbia University and has done graduate work in history, technology and society at Georgia Tech. Rick worked at *The Wall Street Journal* as a reporter's assistant and production copy editor. He also was a reporter and copy editor for a regional newspaper in Massachusetts, and worked as a free-lancer in Atlanta for five years, writing for *The Atlanta Journal-Constitution* and other publications.

Rick can help you troubleshoot problems using the GTRI logo on the Web and can help you with images and converting them for Web use, as well. You may reach him at 894-6989 or at rick.robinson@gtri.gatech.edu.

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