

the GTRI connector

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EPA Establishes Asbestos Information Center at Tech

By Henry McDonald, RCO

Removing asbestos from buildings can create more of a danger than existed before, if it is not done properly. That is one reason why the Environmental Protection Agency (EPA) soon will establish a Regional Asbestos Technical Information Center at GTRI.

The Information Center will be administered by the newly established "Asbestos Programs Group" within the Environmental Health and Safety Division (EHSD) of the Economic Development Laboratory. Bill Ewing is the group leader.

The Center is funded at \$125,000 a year under the Asbestos School Hazard Abatement Act of 1984 (often referred to as the Abdnor bill). It will be one of three centers in the U.S. set up by the EPA to provide training and counsel on how to lessen the dangers of school buildings containing the potentially cancer-causing agent.

Asbestos has been used as insulation and fireproofing in

buildings for more than 50 years. In recent years, studies have linked exposure to airborne asbestos fibers with a variety of diseases, including asbestosis (a lung disease), lung cancer, colon cancer, and pleural and peritoneal mesothelioma (a rare form of cancer). Since the symptoms of these diseases often do not appear for 20 years or more, the risk to young children is considered to be especially grave.

EPA also recently awarded a second grant of \$55,000 to EHSD to develop a model training program on asbestos for replication on a national basis. Project Director William Spain says that the training program will provide technical assistance to contractors and others for the safe removal of asbestos from buildings.

During the past three years, EHSD has presented more than 30 training courses covering asbestos detection, hazard assessment, and appropriate control strategies. These courses have drawn more than 2,500 participants from 48 states and several foreign

countries. These and other efforts have led to the creation of a new organization, the National Asbestos Council, located in Decatur, Georgia.

"The Information Center and training programs are evidence of the continued efforts of Georgia Tech to provide a healthy and safe environment through voluntary efforts of industry," comments Bill Ewing. Similar Georgia Tech programs for hazardous waste management and occupational health and safety have achieved national recognition.

The regulatory history of asbestos is long and complex. In 1973, the EPA banned the use of asbestos as a sprayed-on fireproofing. It presently requires that friable (easily crumbled) asbestos-containing materials be removed from buildings prior to demolition. In April 1984, the Occupational Safety and Health Administration (OSHA) proposed that the permissible exposure limit for workers (2 fibers per cubic centimeter of air) be reduced.

The move to establish the three EPA Information Centers

is partly an outgrowth of a 1982 Asbestos and Schools Identification Rule issued by EPA. This rule requires primary and secondary schools to inspect their buildings for friable asbestos-containing materials. If asbestos is located, the schools must notify their employees and parents of the school children. The Centers will serve to aid the schools in complying with the rule and formulating effective control methods.

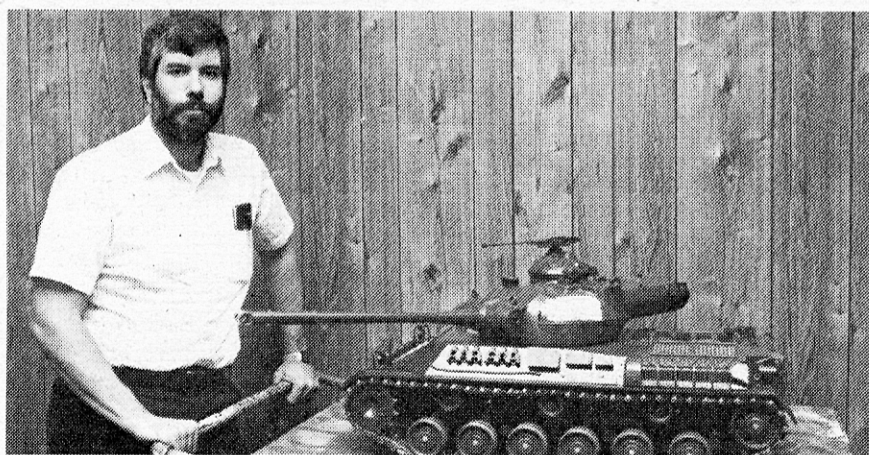
Eva Clay, a spokesperson for EHSD, says that schools have a number of alternatives in responding to the problem of asbestos. They include removal (in which the asbestos is taken out of the building), encapsulation (in which a binder or sealant is sprayed onto the asbestos to keep it from flaking off), and an operation and maintenance program (in which the asbestos is left in place, but carefully monitored). The school, not the Information Center, will decide which solution to adopt.

Model Tank Helps Army Train Gunners

In late February, personnel of the Systems and Techniques Laboratory (STL) will demonstrate the capabilities of a model tank to Army sponsors. The miniature tank, about three feet long and weighing about 130 pounds, operates by remote control. Project Director Tim Smith and his crew in the Systems Development Division have completely rebuilt the tank's innards. Now the Army Research Institute (ARI) will take possession of the 1:10 scale model tank, which STL has modified for use as a training device on gunnery ranges at Army bases.

Civilian psychologists in ARI wanted the device to make target practice more realistic. Currently, tank gunnery crews shoot at fixed pop-up targets. After a few hours, they know where all the targets are. With the new radio-controlled tank, there will always be an element of surprise.

The Army had a model tank that needed modification to make it work. Engineers in STL's Systems Development



Anita Edwards

This model tank was reworked by STL so the Army could use it for gunnery practice.

Division rebuilt the tank, installing a new engine and transmission and reworking the remote control. It will be used on a 1-kilometer practice range, simulating a full-size target 10 kilometers away. Gunners will "shoot" at it with a laser, and "hits" will be registered.

The tank is powered by a little gasoline engine like those used in lawn leaf blowers. It operates with a two-speed hydrostatic drive and goes about five miles an hour.

The Army is leaving STL

another tank, which they will modify even more extensively. Right now, antenna restrictions limit remote control to about 100 feet, but plans are to rework the antenna to increase the distance to one-half mile.

The little tank also can be used in other simulation situations. For instance, it can be used for practice in loading and unloading from shipping carriers, as well as for driver training in such things as maneuvers, formations, and battle tactics.



GTRI will participate in the Southcon/85 Electronics Show at the World Congress Center in Atlanta on March 5-7.

More than 300 electronics and mini/microcomputer companies will exhibit at the show. An exhibit on GTRI's electronics programs will be housed in Booth No. 1109 throughout the three days of the show, from 9:30 a.m. to 6:00 p.m. daily.

GTRI staff members also are participating in several of the 24 professional sessions. Session leaders and presenters include: Jim Wiltse and Fred Dyer, OOD; Ed Reedy, RAIL; Ron Seaman, ECSSL; E. D. Anderson and John Gowens, MCSF; and Jim Muller, EDL.

On the Professional Program Committee are Don Grace (vice chairman), Fred Dyer, and Bob Shackelford from OOD; Josh Nessmith, RAIL; and J.W. Dees (chairman emeritus), OCA. Ron Seaman is vice chairman of the Host Committee, and Don Clark, ECSSL, is vice chairman of the Attendance Committee. The overall convention director is Demetrius Paris, director of the School of Electrical Engineering.

TAL Officials Escape Manila Hotel Fire

Two senior administrators of the Technology Applications Lab (TAL)—Ken Maddox and Bill Larson—barely escaped with their lives from a raging hotel fire in Manila, Philippines, on February 12.

Some 24 people died in the fire, which raced through the 11-story modern hotel just after midnight. Neither the fire alarm nor the sprinkler system worked, and the hotel guests had to

grope their way out in darkness.

Dr. Maddox was almost overcome by smoke, but fled in a bathrobe. Larson managed to grab his trousers with his wallet and passport. The two men lost everything else, but suffered no physical injuries.

They were just completing a project monitoring and contract development trip of several weeks duration and were scheduled to leave for a few

days of relaxation in Hawaii on their way back to Atlanta when the tragedy occurred. Maddox is associate director of TAL and acting chief of its International Programs Division. Among Larson's duties are direction of two multimillion-dollar technical assistance projects in Egypt and Sudan.

The fire was the fourth hotel fire in the Philippines since last fall, and arson is suspected.

Our Gal in Washington

Patty Bartlett represents Georgia Tech in Washington. Her task is to assist in our dealings with the federal government.



GTRI personnel are asked to check with her office before arranging meetings with congressmen or their staffers. She knows the responsibilities and expertise of the individual staff people, and she can make more efficient use of your time and theirs.

Ms. Bartlett formerly was with the U.S. Department of Energy and has spent several years in Washington. Her Washington office is in Suite 1100 at 1101 14th Street. A small conference room is available, and her staff will be happy to handle telephone messages for you while you are there. Her number is 202-842-4008.

O'Hare Made Ass't. Director

Patrick J. O'Hare has been named Assistant Director: Administration of the Georgia Tech Research Institute.

He was selected from among some 200 candidates nationwide for the newly created position, which will report directly to GTRI Director Don Grace and to his associate directors as appropriate.

The new assistant director has line management responsibility for all GTRI activities that are not specifically contained in the research laboratories. He is charged

with implementing policies set by the Office of Director and coordinating the functions of the service groups so that they may operate as a cohesive entity in fostering the objectives of the entire organization.

"My primary goal," O'Hare says, "is to create a unified basis for the service units that will have a 100% positive effect on the research that goes on at GTRI."

His duties will include taking a lead role in developing and managing the objectives and operational budgets of each of



Patricia Stone

the assigned areas as well as monitoring performance.

O'Hare joined EES (now GTRI) in November 1982 as manager of professional recruiting.

GTRI Provides Jobs for Graduate Students

Instructor David Deviney introduced the guest lecturer to his industrial psychology class: Patrick J. O'Hare, professional recruiting manager (since appointed Assistant Director: Administration) for the Georgia Tech Research Institute. In inviting O'Hare to speak, Deviney had two goals in mind: to expose the class to a first-class professional actually doing recruiting in the "real world" and to provide interviewing tips for senior students who soon would be in the job market themselves.

"Attendance was up that day, and we had an enthusiastic response with many questions," Deviney said. "It was an excellent example of how the academic departments can draw on the resources at GTRI."

It also is an excellent example of the beneficial fallout from GTRI's concerted efforts to employ more graduate research assistants. Deviney, a Ph.D. candidate in industrial psychology, had worked as a GRA in the Economic Development Lab's Business Development Division (BDD) for a year and a half. Discovering his skills in human resources, they gave him responsibilities for recruitment of professional personnel for BDD, which is how

he came to know O'Hare.

GRA Recruitment

Three years ago, GTRI (then EES) set up a program, administered by Jim Wiltse with assistance from Ann Mintz, to increase the number of GRAs on its staff. For several years, EES had had some two dozen graduate students working at any given time. In response to a request by Vice President Tom Stelson to place more GRAs as an aid to recruiting more and better graduate students to Georgia Tech, EES had a total of 55 GRAs employed at the end of FY 1983. The total rose to a peak of approximately 86 graduate students in FY 1984, and Dr. Wiltse says GTRI is shooting for 100 before the end of FY 1985. At an average pay rate of \$2,000 per one-third time GRA per quarter, GTRI would be providing \$600,000 over a three-quarter year in support of 100 students—no small sum.

GTRI sweetens the pot for its research laboratories. If a lab hires a GRA who must be paid from lab overhead funds, OOD will foot half the bill; if the student works on a sponsored project, the sponsor pays all.

The normal agreement is to keep the student for at least one year, subject to satisfactory performance and financial

exigencies. The students accepted under the plan must meet high academic standards, must not already be enrolled as graduate students at Tech, and must be U.S. citizens.

GRA Contributions to GTRI

"Wherever possible, we try to match the student's field of study with work at GTRI," Wiltse said. "For instance, two physics GRAs worked for 'Ravi' Ravishankara in the Electromagnetics Lab (EML), and he was one of their Ph.D. thesis advisors in the field of atmospheric chemistry."

One of Ravi's students, Abbas Torabi, won a 1984 GTRI Research Award for design, construction and testing of a fast-flow apparatus to carry out new and innovative spectroscopic and kinetic studies of extremely reactive free radicals. According to the citation, "he successfully assembled the apparatus and has generated more than enough data for at least two publications in refereed journals."

About 35% of GTRI's current GRAs are in electrical engineering, 18% in physics, and 15% in information and computer science. The remaining 32% come from seven other engineering disciplines, management, psychology, and geophysical sciences.

These GRAs not infrequently stay on as full-time GTRI employees after receiving their advanced degrees. For example, Keith Nelms, a former GRA for the Technology Applications Lab, received his Ph.D. in industrial engineering last June and promptly went to work for the Economic Development Lab's Industrial Extension Division as a research engineer II. Two nominees for outstanding GRA for 1984 have recently been hired as research professionals by the electronics labs where they worked: Dennis Folds, M.S., Psychology, by the Systems Engineering Lab, and Douglas O'Neil, M.S.E.E., by the Systems and Techniques Lab.

But this isn't the whole story, Wiltse pointed out. "We also provide part-time employment for some 200 co-ops and student assistants," he said. "And when you add in the more than 100 full-time GTRI employees who currently are taking advantage of the tuition reimbursement program by pursuing graduate degrees at Georgia Tech, you can see that GTRI has a 400-person impact on the academic programs at Tech."

(Look for an article on the Tuition Reimbursement Program in the March *GTRI Connector*.)

Energy Project Saves Money for Georgia Industry

By Nancy Davis, TAL

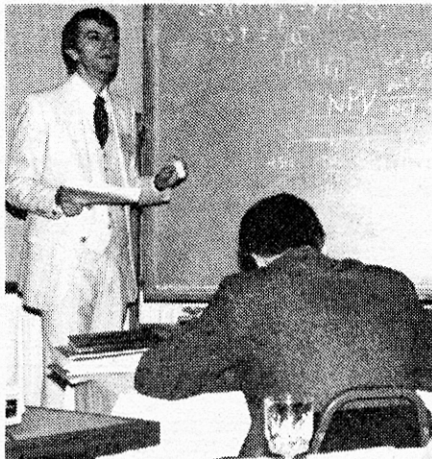
Industry managers in Georgia are saving big energy dollars at their plants by contacting GTRI's Industrial Energy Extension Service (IEES). Doug Moore of the Technology Applications Lab, the newly appointed head of IEES, estimates that in 1984 IEES saved Georgia Industry 111.4 trillion Btu's—an annual saving of more than \$368 million!

IEES is sponsored by the Georgia Office of Energy Resources and partially funded by the U.S. Department of Energy. The project started in 1977 to stimulate more efficient use of energy by industry.

At an industry's request, a Georgia Tech engineer or team of engineers will visit a plant and perform an energy management survey aimed at identifying the big energy consumers in the plant. They then recommend practical solutions, with emphasis on measures that will have the greatest impact at the lowest cost. "Many business people have become aware that the cost of energy can constitute a significant portion of their cost of doing business," Moore observed.

IEES engineers also offer in-plant technical assistance, helping a company to solve a specific energy-related problem. They make a full analysis of the problem and present various solutions to the company, which then can implement the solutions itself or bring in consultants to do it.

Sometimes learning the real cost of energy from an energy management survey can make a company look differently at its operations. For example, a poultry feed producer was losing a lot of energy through steam piping. The steam was used in several places; one use was to heat combined ground grain and fat so that it could be pumped. In addition to following the IEES engineers' recommendation to insulate all



Special Photo

The Industrial Energy Extension Service of TAL conducted a Waste Heat Recovery Techniques Workshop January 30 and 31 in Atlanta. Here Mike Brown presents the economic factors of waste heat recovery.

their steam lines, the company switched to electric resistance heaters to heat the grain and fat tanks, eliminating the heat loss incurred by maintaining a live steam line some distance away from the boiler.

IEES also conducts seminars and workshops which address energy-saving techniques that are common to a number of industries. This year, for example, they will offer workshops on Improving Steam Boiler Operating Efficiency, Waste Heat Recovery Techniques, and Energy Measurement Instrumentation and Techniques. These workshops allow participants to share experience, techniques and ideas concerning energy conservation.

Moore hopes more industries will take advantage of the opportunity to streamline their operations. "All of the more than 6000 industries in Georgia get our newsletter, *The Industrial Energy Conserver*. Our goal is to contact every one of them personally—through our workshops, by performing an energy management survey for them, or by giving them in-plant technical assistance," he said. "While we've already reached more than 2000 companies, we know there are still plenty that could use our services."

STAFF ACTIVITIES

ECONOMIC DEVELOPMENT LAB

In mid-January, **David Clifton** gave a presentation on GTRI outreach programs at a conference of the Georgia Society of Professional Engineers.

Jim Muller will present a paper, "Evaluation of a Decision Support System (DDS) in a General Purpose Language," in early March at Southcon/85-Mini/Micro Southeast, a regional computer conference and exhibition at the Georgia World Congress Center.

News from Environmental Health & Safety: **Bill Ewing, William Spain,** and **Rachel McCain** traveled to San Francisco in January to present the 15th offering of their four-day short course, "Supervision of Asbestos Abatement Contracts." Also in January, **Phil Williams** and **Spain** gave a short course at Emory University, "Toxicology for Occupational Health Nurses," and **Spain** lectured on safety and health at the Institute for Applied Pharmaceutical Sciences in East Brunswick, NJ. The Hazardous & Industrial Waste Management Program hosted its second annual conference and short course February 6-8 on campus.

The Southeastern TAAC staff held briefings in Nashville and Atlanta in mid-December to acquaint Congressional aides with trade adjustment assistance and how it can help companies in their districts hurt by imports.

SYSTEMS & TECHNIQUES LAB

STL announced \$657,832 in new funding in January. Project directors are **Dayton Adams, Rickey Cotton, Ernie Ruda,** and **Charlie Hilbers.**

SYSTEMS ENGINEERING LAB

At the 6th Digital Avionics Systems Conference held

December 3-6 in Baltimore, **Henry Owen** presented a paper, coauthored with **Mike Kopp**, entitled "Gate Array, Standard Cell, and Fully Custom: Building Blocks for the Digital Avionics Designer." **TECHNOLOGY APPLICATIONS LAB**

The Society for Technical Communication, Atlanta chapter, has presented awards to four TAL publications. "Fuel Cell Power Plants," by **GINNY THOMAS** and **HANK JACKSON**, is one of three top local entries that will compete nationally. TAL also won an achievement award and two honorable mentions. Contributors to these publications included **Nancy Davis, Debbie Herman, Carol Aton,** and **Jackson.**

Costa Soulakos gave a paper on the TAL-developed poultry condemnation reporting system at the first annual Agri-Nation Conference in Chicago on February 28.

Bob Didocha will present a position paper on sensor fusion research at the Air Force Artificial Intelligence Workshop in March; he will present a paper on the integration of touch and vision sensors for control of robotic manipulators at the Robots 9 Conference in June. **Didocha** sits on a committee for the Air Force Manufacturing Sciences Division, Manufacturing Technology Programs, at Wright Aeronautical Laboratories; this group is assisting the Air Force in structuring long-range research activities focused at applying artificial intelligence technology to manufacturing problems. In this capacity, he attended the annual Department of Defense Manufacturing Technology Advisory Group Conference held in Seattle on November 25-29.



Special Photo

RESEARCH BRIEFS

(Note: This column is in response to reader requests for a regular feature on notable contract awards. You are invited to submit brief, one-paragraph descriptions of new or follow-up projects that are significant because of size, important results, uniqueness, or special interest.)

The Industrial Systems Branch of the **Technology Applications Laboratory** has received an additional contract from the U.S. Postal Service. The new task is to provide

the Postal Service with a comprehensive digitized data base for both the materials handling and visual imaging aspects of three categories of mail: irregular flat, non-machinable letter mail, and irregular parcel post. Data collection and analysis will include statistical investigations to relate samples to the full mail population. The data base will be used by TAL research staff and furnished to other contractors participating in USPS advanced automation programs. **John Owen** is project director.

TAL's Agricultural Technology Branch has two new projects. The U.S. Department of Agriculture has awarded them \$100,000 for further development of their computer-based poultry inspection monitoring system. A \$50,551 award from **Perdue Farms, Inc.**, calls for construction and installation of a hardware system to monitor poultry inspection activities. Both projects will use a new third-generation technique designed by TAL engineers. **Craig Wyvill** directs both projects.

James Cox (above), a senior research technologist in STL's Defense Electronics Division, stands next to a Ford Econoline Van which is stuffed with 36,000 pages of final documentation written for a recently delivered multimillion-dollar radar research project. The U.S. Army paid more than \$500,000 for the documentation, which is believed to be the largest single documentation effort at GTRI for any technical program. **David Gifford**, an electronics specialist in DED, assisted **Jim** in this seven-month project and the delivery of the documents to Redstone Arsenal. Some of the authors in STL were **Dr. A. C. Nelson, Don E. Rogers, Rickey Cotton, Hank Prinsen, Lee Stillman, David Asbell, Phillip Pflueger, Tom Thompson** (now in ECSSL), **Bill Dittman, Tim Smith** and **Grover Richardson.**

Bill Ward Retires

Director of Services William C. Ward, Jr., retired January 31 after nearly 20 years of service to Georgia Tech.



After receiving his B.S. in industrial management from Tech in 1940, Bill served 24 years in the U.S. Marine Corps, retiring in 1964 as a colonel. He joined EES in 1966 to work in the management and technical assistance area of the Industrial Development Division (IDD). He directed the EDA services activities for some 10 years. He was chief of the Industrial Development Division from 1972 to 1979, and associate director of the Technology and Development Laboratory from 1977 to 1979. For the past six years, Bill directed the operations of the eight service groups of GTRI.

Lorimer Clayton Dies in January

Dr. Lorimer Clayton, Jr., former EES research scientist, died of cancer on January 9. He was employed in the old Physical Sciences Division from 1951 until 1958, when he resigned to join the fledgling Scientific-Atlanta.

A native Atlantan, Larry received both his baccalaureate and advanced degrees in physics from Tech, graduating in 1951 with a remarkable 4.1 (sic) average.

He and his family have had multiple connections with EES. He was married to the former Anne Rosselot, the daughter of Dr. Gerald A. Rosselot, who was the EES Director from 1941 to 1952. Anne worked as a research scientist for RAIL and its predecessor units in the 1970s. Their daughter, Martha, was a research technologist in EMSL's Solar Division in recent years, and their son, Richard, was a student assistant in PSD.

HELP YOURSELF!

Training Programs for GTRI Employees

Software Training

"C" (9-4:30): Mar. 18-20.
dBASE II (9-4:30): Mar. 11-12.
DOS (9-12): Mar. 7, 22.
GTIMS (9-4:30): Mar. 4-5.
Lotus 1-2-3 (9-4:30): Mar. 14, 27.
Volkswriter (9-12): Mar. 26.
Wordstar (9-12): Mar. 25.

Contact Software Training Facility, 325 Hinman, ext. 6206, for more information. Classes fill up rapidly!

Staff Development

Monthly Film Series: Week of March 4. Title and specific dates to be announced for campus and GTRF/CC.

Seminars:

Introductory Project Management (12th

Session). April 23. Baker Building. Strategies for Winning Worthwhile Research Projects (8th Session). May 14. Baker Building.

The above seminars, designed for research staff, are free and taught by GTRI personnel. Persons completing earn .6 CEU. To register, contact your lab director. For more information, call Bob Collier, ext. 6238.

Technology of Human Communication.

Conducted by psychologist and TV personality Dr. Burt Bradley. Comprises three half-day sessions: March 28, April 4, May 9.

Designed for support staff. Cost to be announced. For more information, call Jean Fuller, ext. 6237.

Batter Up!

THE WRECKS, a highly competitive softball team, is looking for a few good to excellent players to fill its roster for the spring intramural season. If interested, contact Paul Thomas, ext. 3445, or Jerry Hitt, ext. 4157.

STRICTLY PERSONAL

ECONOMIC DEVELOPMENT LAB

The Industrial Education Department has transferred from TAL to the Industrial Extension Division of EDL. Ben Roberson, Bobby Cline, Charles Duke, McCamie Davis, Voranda Prather, and Joy Daniel continue to be located in the Swann Building.

Starla and Mack Davis are the proud parents of a daughter, Sarah Claire, born February 6.

OFFICE OF DIRECTOR

Welcome to Sherri Burris, accounting assistant.

RADAR & INSTRUMENTATION LAB

Brian Hudson will be temporarily assigned to RAIL's New Jersey facility for the rest of the year.

RAIL is sorry to lose two of its engineers—Mark Richards and Perry Schwartz.

RESEARCH COMMUNICATIONS

Charlie Haynes has transferred from the Photo Lab to be RCO's photographer/AV manager.

SERVICE GROUPS

Accounting recently welcomed Janice Green, accountant II, and said good-bye to Linda Maynard.

Facilities Management: Tom Jones wishes to thank everyone for the kindness and concern shown him after the death of his mother on January 29.

Personnel Services: Diane Trimble has resigned.

SYSTEMS & TECHNIQUES LAB

Charles Sheets and David Gifford have been promoted to electronics specialists.

Alton Dunn has transferred to the Electronics & Computer Systems Lab.

SYSTEMS ENGINEERING LAB

Congratulations to January employees of the month Mike Furman (Cobb County) and Rick Morrison (campus). Mike was cited for writing and documenting a driver package that allows a 9-track tape

drive unit to act as a peripheral device to an IBM PC under FORTRAN. Rick was cited for directing the design and fabrication of an instrumentation system that will enable the Air Force to collect quantitative data describing the impact of a radar warning receiver on an active electronic countermeasures system in terms of real-time blanking of the jammer.

New employees: Dr. Richard Ingle, senior research scientist, formerly was associate professor and coordinator of the Computer Science Department at West Georgia College. Lloyd Konneker, research scientist II, most recently was a research assistant with the Computer Science Department at the University of Illinois while working on his doctorate. Suzy Calvert is the new division secretary for the Countermeasures Development Division. Suzanne Keiller has transferred from EDL as a word processor operator for the Human Performance Branch.

Sam Blankenship has been appointed head of the Mission Analysis Branch, replacing John Gibbons, who resigned effective January 31. Other resignations include Doug Hoder and Lee Isley. Bonnie Karr of the Eglin Field Office recently was promoted to administrative secretary.

Jim Brannen has transferred to the MiniComputer Service Facility, and Hugh Warren has accepted a position as a budget analyst in the GT Business Office.

TECHNOLOGY APPLICATIONS LAB

Hank Jackson has resigned.

Diane Karneboe has transferred to the Industrial Systems Division from the Industrial Education Department.

Lynn Karjala became the bride of Doug Anderson on February 8.

WHAT'S AHEAD

Events of Interest to GTRI Employees

MARCH

18-21 Continuing Education Course, "Elements of Phased-Array Radar System Design." Administrator: Dr. Josh T. Nessmith (RAIL).
26-28 Continuing Education course, "Industrial Toxicology." Course Director: Phillip L. Williams (EDL).

APRIL

7-12 18th Annual Basic Economic Development Short Course. Course Director: Robert B. Cassell. Associate Director: David S. Clifton (EDL).
17 IEES-TAL Workshop, "Improving Boiler Operating Efficiency." Location: Augusta Area Technical School. Cosponsor: South Carolina Energy Research and Development Center, Clemson University.

MAY

15 IEES-TAL Workshop, "Energy Measurement Instrumentation and Techniques." Location: Harvest House Hotel, Atlanta.
26-31 American Association for the Advancement of Science Annual Meeting, "Science and Engineering: Diversity and Convergence." Location: Los Angeles. To feature 160+ symposia, 9 public lectures, science film festival, exhibit.

Note: This column will list seminars, short courses, meetings, conferences, and other events to which GTRI staff are invited or which are of general interest. To have your special event included, send details to Connector Calendar, RCO-GTRI, Campus. Requests should be sent at least one month in advance, since *The Connector* is a monthly publication.

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... is published for Celeste Cone, administrative secretary and receptionist in the Hinman Building ...



and other employees of GTRI.

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Editor

Martha Ann Stegar 3444

Associate Editors

Dee Ramunno, OOD 3401
Lincoln Bates, EDL 6230
Gail Tucker, EML 3500
Carolyn Mahaffey, ECSL 3542
Charlotte Sanders, EMSL 3460
Maggi Harrison, RAIL 424-9621
Bill Williams, SEL 3564
Vickie Fennell, STL 424-9611
Deborah Lockman, TAL 3623
Art Vandenberg, MCSF 6203
Marianne Thompson, Services 3445