Station News

Georgia Tech Engineering Experiment Station

Volume 13 Number 10 June 1983

Steve Losser (left) and Jim Thomas pause outside the Hinman suite that houses the minority business assistance activities of EES. (Photo by Charles Haynes)

Choctaw Tribe Gets EDL Assistance

Economic Development Lab staff members working with the Rural Assistance Program (RAP) have been involved in a marketing effort that is bringing a wide variety of new firms into the program. RAP Director Jim Thomas has worked closely with Ed Bethea of EDL's Technology Utilization and Commercialization Center, directors of the EDL field offices, and Steve Losser of the Business Development Division outreach staff to identify potential client firms.

The minority-owned firms requesting assistance include not only those involved in technological applications, but also a grocery operation, a restaurant and convenience store, a retail liquor store, a pork processing plant, and even more novel, the Tribal Council of the Mississippi Band of Choctaw Indians.

Losser describes the situation as follows: "More than 2,000 people live in the Pearl River Indian Community on the Choctaw Indian Reservation. Pearl River is the second largest community in the county, and provides ample employment opportunities at the Bureau of Indian Affairs schools, at the reservation hospital, or in three local industries. However, the community's shopping facilities consist of one small convenience store. Therefore, most people shop 10 miles away at the county seat."

Losser noted that there has been a dramatic increase in disposable income for the average Choctaw since 1978. Most of these dollars, however, are spent at retail businesses located outside the reservation. A high priority for the Tribal Council is to reduce this drain of economic power. This is difficult, since most individual Choctaws lack the financial assets to develop a business.

To address both problems, the Tribal Council has proposed to develop a retail shopping mall on the reservation for occupation by Choctaw-owned retail businesses. The Council will provide funding for the project. RAP assistance will include a feasibility study to determine if a retail shopping center located on the reservation is a viable business venture.

Johanna Williams

GTIMS Starts With Time Sheets

The first module of a powerful management tool for EES project directors is at the starting gate and ready to go.

On June 1-2, laboratory secretaries and administrative coordinators participated in the first full-scale test of the Time Reporting module of the Georgia Tech Information Management System (GTIMS) which is currently being developed at EES. In a workshop setting, they learned how to put time sheet information on the computer. The data will be used to report to project directors on a timely basis actual versus budgeted personal services charges, in terms of man-hours as well as dollars.

At the end of June, another joint data-entry session will be held. Soon, each research laboratory and division will have its own interactive microcomputer terminal to enter time sheet and other project data on a regular basis. The microcomputers will communicate with the EES VAX minicomputer, which will aggregate the data to provide an overall EES project data base.

Fred Dyer, Dean Spencer, and Ed Anderson are directing the GTIMS development project, with overall guidance from EES Associate Directors Gerald Carey and Howard Dean. Michael Furman, Lindsay Morris, and Andy Cranfill are writing, testing,

(Continued on page 3)

1983 Promotions

Congratulations to the following 35 EES employees, who are being promoted, effective July 1, to:

Principal Research Engineer/ Scientist:	
Neal T. Alexander	RAIL
Robert A. Cassanova	EMSL
David S. Clifton	EDL
Akkihebbal R. Ravishankara	EML
Charles T. Rucker	EML
James A. Scheer	RAIL
Senior Research Associate/ Engineer/Scientist:	
Harry W. Andrews	SEL
Richard S. Combes	EDL
Ronald E. Creswell	SEL
Larry R. Edens	EDL
Walter A. Hendrix	TAL
James D. Higgins	STL
Margaret M. Horst	RAIL
A. Perry Schwartz	RAIL
David D. Tarkowski	EML
James L. Walsh, Jr.	TAL
William R. Youngblood	SEL
Research Associate/Engineer/ Scientist/Technologist II:	
Anthony M. Andruzzi	ECSL
William W. Butler	ECSL
John K. Daher	ECSL
Constance R. Foulke	ECSL
Linda L. Harkness	RAIL
Adrienne J. Harrington	SEL
Robert S. Hawkins	EDL
Henry Z. Jackson	TAL
Larry A. Jackson	ECSL
Anthony D. Jape	TAL
Kenneth E. Johnson	EDL
Casey C. Lang	ECSL
William L. Leverett, Jr.	STL
Walter S. Lewis	EMSL
John M. Nicovich	EML
Michael Shannon	RAIL
James T. Smith	RAIL
Terry E. Tibbitts	SEL

Booklet Wins Award

The *Millimeter Waves* capabilities booklet recently won an award from the National University Continuing Education Association in a competition sponsored by NUCEA's Information Services Division. The EES booklet placed third among 483 entries in the category, "Booklets best describing a program." The booklet was produced by the Research Communications Office in cooperation with the electronics laboratories.

Betty Bone: A Tech Pioneer

Elizabeth N. Bone, a programmer III in the Systems and Techniques Lab, died suddenly on May 4. She had worked at EES for over 30 years. She was a trailblazer in many ways. When she was hired in January 1953 as a technical assistant, she became the first female at EES in a purely technical position.

"We have never graduated a better student from Southern Tech; she has held her own with the men and is very outstanding." So said one of Betty Bone's letters of recommendation submitted with her Georgia Tech employment application in 1953.

Betty Bone wanted to attend Georgia Tech, but at the time she applied Tech did not accept women. She enrolled at Southern Tech instead, receiving an associate degree. By that time Georgia Tech was admitting women, and she entered the Electrical Engineering program. She nearly completed her degree, but the demands of having a family prevented her from finishing.

Betty worked on a variety of programs at EES during her long career. She matched millimeter waveguide components on the first millimeter radar built in the U.S.; she wrote computer software for near-field antenna measurements; and she was instrumental in developing design procedures for the offset waveguide junction invented by Searcy Hollis (now with Scientific-Atlanta).

Betty Bone saw many changes in technology during her Tech career and was able to adapt to all of them. She started taking antenna patterns before pattern recorders were invented. Pattern levels were read from a meter, written on paper, plotted on graph paper, and then connected with a curve. When pattern recorders were introduced, she used them. For the last several years, she predicted antenna patterns on a digital computer and validated these predictions with computer-controlled, digitally recorded pattern data taken on the Georgia Tech antenna range. Over the past 15 years, she was instrumental in developing the EES computer programs for reflector antennas.

Betty will be missed by all who knew her.

Berry Pyron

Harrison Resigns

Gordon R. Harrison has resigned from Georgia Tech to become Vice President/Components and New Technology for Electromagnetic Sciences. The Norcross, Georgia, based firm was founded by Tech alumnus John Pippin.

Dr. Harrison came to EES from Sperry Microwave Electronics Company in November 1971. He headed the former Applied Sciences Laboratory for seven years, working particularly in the areas of microwave integrated circuits, semiconductor devices, solid-state materials and components, and microelectronics. For the past four years, he has been a valuable member of the senior staff of the Office of the Director. He is a Fellow member of the Institute of Electrical and Electronics Engineers.

Dr. Harrison played a key role in organizing the Corporate Liaison Program at Georgia Tech, and served as its coordinator and chief liaison officer. Among the many ways that he served the Tech community were as secretary of the Faculty Honors Committee, member of the Self Study Steering Committee, chairman of the EES United Way campaign, EES/academic liaison on graduate research assistant placements, and as lecturer or supervisor in numerous short courses and training programs.

Brochure Reprinted

The promotional folder, *Research: Georgia Tech's Engineering Experiment Station,* has been updated and reprinted. If you need copies, call Research Communications, ext. 3444, and ask for the green "laser" brochure.

TAL Completes Biomass Fuel Studies

Both the Army Corps of Engineers and the City of Tallahassee have been looking at switching from natural gas and coal to cheaper woody biomass with the help of the Technology Applications Lab (TAL).

For the Corps of Engineers, TAL helped determine the feasibility of procuring biomass to fire wood boilers for three Army ammunition plants in Kansas, Indiana and Tennessee. They presently use natural gas and coal-fired steam plants to produce process heat for the manufacture of weapons and explosives.

Under a subcontract with the University of Alabama/Huntsville, TAL engineers Bill Bulpitt and Dave Harris researched the technology available for harvesting biomass and its cost. The overall objective was to ascertain whether a sufficient volume of biomass was available within a 50-mile radius of each plant, the feasibility of harvesting it, and the costs involved.

Bulpitt and Harris, assisted by Tom McGowan, also recently completed a study for the City of Tallahassee, Florida, on the feasibility of burning wood to generate electric power. The city currently uses natural gas and oil to produce power, but is seeking a cheaper fuel after 1985, when its present advantageous contract expires. The team estimates that by 1990, the cost of natural gas per million Btu will be nearly three times that of wood.

TAL's research engineers have been doing feasibility studies aimed at increasing the use of wood as a fuel for several years. Some of the installations they have assisted in Georgia are located at the Central State Hospital in Milledgeville, the Gold Kist soybean processing plant in Valdosta, the Integrated Products texile mill in Aragon, the Northwest Regional Hospital in Rome, and the Georgia Industrial Institute at Alto.

Professional Activities

ECONOMIC DEVELOPMENT LAB

Johanna Williams gave an invited address on "Performance Improvement in a Textile Mill" at the Ninth Annual Convention of the Association for Behavior Analysis on May 27 in Milwaukee, Wisconsin.

Jim Muller was in South Korea May 12-June 21 providing industrial assistance on the Korea Credit Guarantee Fund project.

ENERGY & MATERIALS SCIENCES LAB

Bob Cassanova presented a paper on "Advanced Concepts for Conversion of High-Temperature Solar Energy" and chaired a session at MELECOM/83, the IEEE Mediterranean conference held in Athens, Greece, May 24-26. He reported that **Sid Firstman** (TAL) also presented a paper, and Vice President for Research **Tom Stelson** chaired a session.

SYSTEMS & TECHNIQUES LAB

Bill Dittman is co-inventor of a multiposition waveguide switch that has been awarded a U.S. patent.

TECHNOLOGY APPLICATIONS LAB

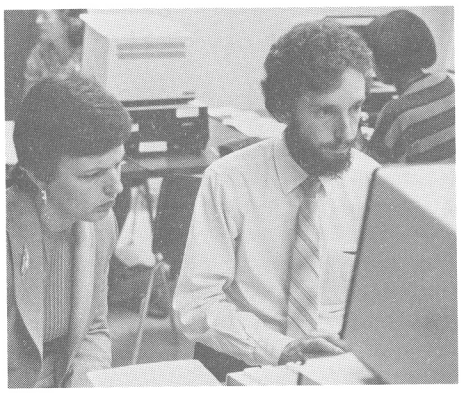
Charles Duke conducted a management training program for Chemical Products Company in Cartersville and participated in a similar program for Gulfstream America, Inc., in Savannah.

During May, **Bobby Cline** conducted a workshop on effective communications for the American Society of Hospital Food Service Administrators in Atlanta and taught a four-day course on instruction methods for industrial trainers at Swift Textiles in Columbus, Georgia.

At the joint convention of the Florida and Georgia Meatpackers Associations in Ponte Vedra Beach, Florida, on June 3-4, **Hank Jackson** gave a presentation on "Energy Conservation in Meat Packing."

At the June 1-3 meeting of the American Solar Energy Society in Minneapolis, **Tom McGowan** presented two papers: "Building Energy-Efficient Homes" and "Georgia's Industrial Wood Energy Program." **Bill Bulpitt** coauthored the latter paper, as well as one that McGowan presented at the June 19-23 meeting of the Forest Products Research Society: "Wood Gasification for a Large-Scale Chemical Plant."

Carol Aton has been appointed national publications chair for the Society of Women Engineers. She and **Keith Nelms** have coauthored with TVA personnel a book entitled *Safe and Sound Masonry Chimneys.*



Lab personnel learn how to enter time sheet data into the EES management information system. (Photo by Warren Smith)

GTIMS *(Continued from page 1)*

evaluating and documenting software programs on the microcomputer end. John Lee and Margaret Hickey are responsible for the CYBER/VAX interface, with Hickey writing the program to translate the CYBER data into INGRES, a relational data base for the VAX. Barbara Turner advises the design team on the accounting system, and Gerald Mackey helps coordinate personnel and resources.

The microcomputers will use dBASE II, a powerful programming language. The programs will be menu-driven and easy to run. Commercial software is being purchased, with the design team writing the applications. Any CP/M or MS-DOS based system can be used.

The design team is developing other modules for the GTIMS. A Pre-Project Planner will help project directors lay out tasks and subtasks. A Material Request module will help them keep up with the progress of MR's through the procurement system. Other modules will deal with such matters as property control, security and technical performance.

SEL Gives Workshop For Lockheed

Personnel of the Systems Engineering Lab conducted an eight-hour Electronic Combat Workshop for Lockheed Georgia Company on May 25-26. George McDougal, John Gibbons, Tom Miller, Bob Beasley and Bud Sears gave presentations. More than 30 Lockheed engineers attended the workshop, which was presented under the auspices of Tech's Corporate Liaison Program, of which Lockheed is a member.

Walton Retires

Jesse D. Walton, Jr., an internationally known figure in high-temperature materials and solar thermal research, is retiring on June 30 after an illustrious 31-year career at EES.

A Georgia Tech graduate with a Bachelor of Ceramic Engineering degree, Walton built the ceramics research activity at EES from modest beginnings into the High Temperature Materials Division, which he headed from 1968 to 1975. His pioneering development of slip-cast fused silica for use in radomes and thermal protection systems for reentry vehicles led to the fabrication of the nation's largest ceramic radome, now on exhibit in the American Ceramic Society Museum in Columbus, Ohio. He edited the *Radome Engineering Handbook,* and was a radome consultant with Selenia in Rome, Italy, during a six-month leave of absence in 1975-76.

Walton returned to EES in 1976 as technical manager of solar energy programs. EES solar research had gotten started in 1971, when Walton initiated high-temperature materials testing at the 1000-kW solar furnace in Odeillo, France, in a cooperative relationship with the Centre National de la Recherche Scientifique that is still ongoing. He developed the program with NSF and ERDA (now the U.S. Department of Energy) that resulted in construction of the 400-kW Georgia Tech solar thermal test facility, which is the second largest such facility in the United States.

Walton also gained prominence in low-technology applications of solar energy to the needs of developing countries, with emphasis on Africa. He organized and served as local arrangements chairman for the Silver Jubilee Congress of the International Solar Energy Society, held in Atlanta in 1979.

Since 1981, Walton has been chief scientist of the Energy and Materials Sciences Laboratory. A Fellow of the American Ceramic Society, Walton is past chairman of the Ceramic-Metal Systems Division and a member of the National Institute of Ceramic Engineers. He is continuing his ceramic career as a private consultant.

Strictly Personal

ECONOMIC DEVELOPMENT LAB

Gayle Hudson became Mrs. Bruce Warren on June 18.

At the Retirement and Awards Dinner, **Tze Chiang** received a Gold-T pin for 25 years of service to Tech.

ELECTROMAGNETICS LAB

Billy Livesay also received a 25-year Gold-T pin.

Walter Cox has been elected to Tech's Public Relations Committee.

RADAR & INSTRUMENTATION LAB

New employees are **James Edwards,** research engineer I; **Robert Loebach,** research engineer I; **John Trostel,** research scientist I; **Bruce Lavers,** electronics technician II; and **Robert Sandberg,** programmer II.

Terminating their employment were **Mike Shannon**, who has gone to Rockwell, and **James Smith**, who has gone to Lockheed.

OFFICE OF THE DIRECTOR

Arlene Edmiston has replaced **Kathy Barbay** as administrative secretary/receptionist.

Bill Howard has been elected to the Faculty Status and Grievance Committee.

SERVICE GROUPS

Accounting: **Linda Bearce** was married to Neal Maynard on May 14.

Personnel Services: **Joann Ward** has transferred to the Electronics & Computer Systems Lab as administrative secretary in the Electromagnetic Compatibility Division. **Linda Murphy** is a new personnel assistant I, transferring from the Nuclear Research Center.

Supply Services: New employees are **DeeAnn Reese,** clerk IV, and **Joyce Oram,** clerk-typist II. **Jerry Brown** was married on April 30, and **Junice Hall** was married on June 18.

SYSTEMS & TECHNIQUES LAB

Joe Parks has been elected to the Faculty Benefits Committee.

SYSTEMS ENGINEERING LAB

Catherine Powell and **Walter Addison** were married on June 4. **Tammy Sheffield** was married to David Paal on June 11. Best wishes to all.

Former co-op **Steven Cole** has joined the ESM Division as a research engineer I. **William Allen** is a new research engineer I in the Concepts Analysis Division.

Industrial Energy Service Offers Aids

TAL's Industrial Energy Extension Service (IEES) held two back-to-back workshops May 19-20 to help industries struggling with rising utility bills. The workshops, "Improving Boiler Operating Efficiency" and "Energy Measurement Instrumentation and Techniques," were held at the Howard Johnson Hotel adjacent to the Tech campus. Mike Brown and Joe Hoppe coordinated the workshops.

IEES has just started issuing a new series of Technical Briefs "designed to present Georgia industry with up-to-date information about new or underutilized technologies and practices that can lead directly to substantial energy savings," said IEES Director Hank Jackson. No. 1 is on "Industrial Lighting." Others to follow in June are on "Solid State Motor Controls," "Computer Energy Management Systems," Direct Digital Control," "Machnozzles," and "Coal Utilization."

Research Communications has moved from the Hinman Building to spacious offices on the second floor of the Savant Building. Come see us!

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