# **Station News**

## **Georgia Tech Engineering Experiment Station**

Volume 15 Number 2

September 1984



# Shackelford Named Associate Director for Resources Labs

Robert G. Shackelford is the new EES associate director for the resources laboratories, effective September 1. He replaces Rudy Yobs, who retired June 30.

The selection of Shackelford was the culmination of a national search that produced nearly 200 applicants. "We are proud to announce Mr. Shackelford as an excellent choice from among a number of very well qualified external and internal candidates," said EES Director Donald Grace. "We look forward to working with a man of his proven leadership, sound judgment, and managerial abilities."

Shackelford has been the director of the Electromagnetics Lab (EML) for the past three years. In this capacity, he has directed programs in microelectronics, material sciences, atmospheric chemistry, and millimeter-wave propagation phenomena. Last December, he received EES's first annual award for outstanding performance in management.

A 25-year employee of EES, Shackelford demonstrated his management skills by organizing EML's Electro-Optics Group (now a division) in 1975. He became associate director of EML in 1977 and director in 1981. Dr. N. Walter Cox will be acting director of EML while a search is conducted for a new permanent director.

## GTIMS Shifts into High Gear

The Georgia Tech Information Management System (GTIMS), a powerful, comprehensive computerized management tool for EES project directors, is now on line in most EES administrative units.

EES Director Donald Grace views GTIMS as a vital part of EES's commitment to a growing base of research projects. "We recognize that adequate support of project directors is essential to EES's continued success and that computerized planning tools are important components of that support," he said. Associate Directors Gerald Carey and Howard Dean have provided overall guidance and support in the development of GTIMS.

Every laboratory is using the time reporting module, and many are keeping track of management reports, accounting data, and other employee items through the system, thereby providing timely management data on such items as project costs. Of the service groups, Research Property Management, Personnel Services, and Supply Services are on line, with the other units soon to follow.

GTIMS is one of the tools used by the Georgia Tech Research Network. The Office of the Vice President for Research has provided each research unit with at least one IBM PC with which they can communicate with the VAX minicomputer in the Electronics Research Building. The VAX, in turn, communicates with the Tech CYBER, and will communicate with the Burroughs in the Office of Contract Administration when it comes on line. Addition of the new IBM 4361 minicomputer this fall will allow a significant increase in the number of individuals on the Research Network. Associate Vice President for Research Albert Sheppard expects to involve all research units, principal investigators, and project directors.

#### What GTIMS Can Do

"GTIMS can assist project directors during all phases of a project—at the preproposal, proposal, and after-award stages," said Fred Dyer, who has guided the development and implementation of the system since its inception. "It also provides support to all aspects of EES research management. GTIMS won't replace the need for direct management involvement in a project. But it is a tool to make the manager's job easier, to help select those projects which need a closer look, and generally aid in the communications between manager and project director. For instance, the system will produce a list of projects likely to overrun, but early enough to allow adjustments to be made. I believe this feature alone will save us enough in overruns to pay for the cost of running the program."

How to Plug In

Dyer and Dr. Gerald Mackey, manager of the MiniComputer Service Facility, are available to make presentations explaining GTIMS to the senior staff of each laboratory. For assistance in using the system, contact the GTIMS Support Group (ext. 6200), located at 226 Hinman Building. Art Vandenberg heads the group, assisted by Wanda Fox and Rob Steele. The GTIMS Development Group, also in Hinman, consists of Dr. Jay Gowens (head), Ed Anderson, John Barkshadt, Jeanne Hall, Pat Mathiasmeier, and Lindsay Morris.

Training in the use of GTIMS is provided through the Software Training Facility (ext. 6206), since GTIMS is based directly on a number of popular commercial software packages that are included among the courses currently taught. GTIMS training also has been incorporated in the project director training offered under the staff development program headed by Dr. Neil Hilsen (ext. 4545).

#### Plummer Names News

Station News has a new name—The GTRI Connector—and the winner of the \$100 prize is Dave Plummer of the Systems Engineering Lab. Plummer says he coined the name "to reflect the concept of the publication being a mechanism for providing improved two-way communications." Thanks to all the contestants, who submitted a total of 109 entries. Watch for the inaugural issue of The Connector in October.

### Readers Critique STATION NEWS

Last month, in an effort to improve STATION NEWS, the editor conducted a reader survey. Some 900 questionnaires were inserted in copies of the July-August STATION NEWS that went to full-time EES employees. Of these, 182 (slightly more than 20%) were returned in time to be included in the tabulation of results, although survey responses continue to trickle in. Following are the results:

- 1. Do you regularly read STATION NEWS? Yes: 93% No: 7%
- 2. If "no," why not? Of 13 respondents, 7 checked "Don't have time"; 4, "Don't receive"; 2, "Not
- 3. Which of the following do you read and how often? (% of respondents to each item; total responses ranged from 169 to 177)

	Always	Often	Seldom	Never
News stories	39%	48%	11%	2%
Research articles	27%	54%	16%	2%
"People" stories	32%	49%	16%	2%
Professional Act.	37%	44%	14%	5%
Strictly Personal	57%	33%	9%	1%
MiniComputer News	24%	39%	30%	7%
Photos/captions	65%	31%	3%	1%
Policies, benefits	62%	32%	5%	1%
Announcements	53%	40%	6%	1%
Cont. Ed. calendar	31%	34%	29%	6%
Historical mat'l.	27%	47%	22%	4%

4. Which of the above would you like to see more of? (124 answers) less of or eliminated? (Only 72 replies to either or both of these parts; answers are combined here)

	,	
	More	Less/Eliminate
News stories	39%	8%
"People" stories	38%	8%
Research articles	35%	14%
Policies, benefits	31%	4%
Photos/captions	20%	1%
Strictly Personal	19%	10%
Historical mat'l.	10%	12%
MiniComputer News	10%	18%
Announcements	8%	5%
Professional Act.	6%	29%
Cont. Ed. calendar	6%	22%

5. Which of the following would you like to see added? (% of respondents to each item; total responses ranged from 160 to 171. Since aggregates of "Oppose" and "Strongly Oppose" answers totaled only from 2% to 10%, they are not given here.)

	Strongly		Don't
	Favor	Favor	Care
Human interest features	21%	48%	27%
Humor/light pieces	18%	46%	29%
Reader feedback	17%	47%	29%
Non-work-related features	21%	49%	22%
Reader question/answer	20%	37%	38%
Reader opinion/editorial	18%	41%	31%
EES Director column	14%	35%	41%
Employee work features	12%	45%	33%
Back-page social notes	13%	49%	30%
Notable contract awards	21%	49%	23%
Calendar of events	19%	63%	16%

6. How would you like to receive STATION NEWS? As currently distributed: 72%. Individually addressed: 17%. Don't care or No. reply: 11%. (Ed. Comment: Although it would seem that the majority like the present distribution method-bulk mailing for distribution within the research unit, the fact that only 20% of the guestionnaires were returned implies that perhaps many employees do not regularly receive or pick up STATION NEWS. Thus, perhaps the "silent vote" is for individually addressed copies.)

7. Ranking of sources of information. (125 people gave partial or full answers in both columns: 35 answered in one column only.) Although results are inconclusive, analysis indicates the

ionowing.		
Ranking in Orde		Prefer to Get
of Importance	Info from	Info from
1	Memos/letters	Supervisor
2	Supervisor	Memos/letters
3	Grapevine	STATION NEWS
4	STATION NEWS	Bulletin boards
5	Bulletin boards	Grapevine

8. I would best describe STATION NEWS as: (Check no more than 4) (175 respondents)

(CHECK NO MORE	tilali 4	i) (175 Tespondei	113)
Informative	73%	Objective	10%
Interesting	50%	Technical	9%
Easy to read	49%	Propaganda	5%
Adequate	35%	Boring	5%
Entertaining	21%	Inadequate	3%
Accurate	15%	Biased	2%
Bland	15%	Useless	2%
Helpful to work	11%		

9. Profile of respondents.

Job Category: Management 24%; Technical - 57%; Clerical - 13%; Service - 5%; Student - 1%.

Location: Campus - 62%; Cobb County -32%; Field Office - 6%.

Length of Employment: 0-2 years - 36%: 3-7 years - 40%; 8-15 years - 15%; Over 15 years

Sex: Male - 65%; Female - 35%.

Age: Under 30 - 28%; 30-55 - 66%; Over 55

10. Other comments about STATION NEWS: (Ed. Note: 27 people made comments, of whom 7 simply commended us for doing a good job. Selected criticisms and suggestions are given

'Too much emphasis on the big wheels. How about more material and names of the little 'gears' that make things run? Need more humorous material!'

"Could add an 'Unprofessional' Activities category for the 'peons.

'It needs to be more timely."

"More photos."

"Should include employee improvement section (i.e., ways of advancement, and how EES helps employee development and advancement)

"Keep it light, simple, and interesting; I get enough boring business information through channels."

'Need to focus on off-site offices also."

"Would like to see more personal stories."

"Some associate editors are inactive, making it appear that the labs or organizations they represent are inactive. Others report trivial activities, making it appear that their labs are engaged in trivial activities. Achieve consistency." (Ed. Note: Your associate editors would appreciate your volunteering information. They need your help in nosing out the news.)

Strictly Personal should be made inclusive. My marriage and the birth of my daughter were not mentioned, while those of others are. The hiring of some persons is included while not others. Either treat everyone equally or drop it.'

(Ed. Note: We can't write about your milestones if we don't know about them. Report them to the associate editor for your unit or send them directly to STATION NEWS.)

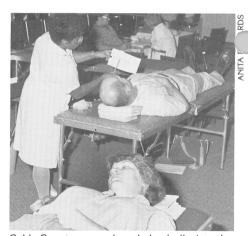
"We never receive enough copies of Station News to distribute to all ... staff." (Ed. Note: Let us know where you are, and we'll see that your unit gets enough copies.)

"A waste of time, money and paper."

Thanks to everyone who responded to the survey. We heard what you said and will try to implement your suggestions wherever and whenever feasible. To those who didn't respond, we hope you'll write or call whenever you have an opinion to share.

## Research Awards Nominations Due

Do you know someone in EES that you feel deserves recognition for outstanding performance in research, program development, management, research support, or as a student employee? Now's the time to get your nominations in to your lab director or service group manager. Each EES unit must submit its official entries to the Awards Review Committee by October 1. The 14 winners will receive their awards on December 6 at a reception in the Student Center ballroom.



Cobb County researchers helped alleviate the Red Cross's acute blood shortage by holding an emergency blood drive August 27. Even on one day's notice, they donated 43 pints.

### Software Training Schedule

Sept. 17-18. dBASE II. 9-4:30.

Sept. 25. LOTUS 1-2-3. 9-4:30.

Sept. 27. DOS. 1:30-4:30.

Oct. 4-5. GTIMS. 9-4:30.

Oct. 9. DOS. 1:30-4:30.

Oct. 11. Advanced DOS. 1:30-4:30.

Oct. 15-19. dBASE II. 9-12.

Oct. 22-24. "C" (Programming Language). 9-4:30.

Oct. 25. DOS. 1:30-4:30.

Oct. 30. Volkswriter Deluxe. 9-12.

Oct. 31. LOTUS 1-2-3. 9-4:30.

Contact Software Training Facility, 325 Hinman, ext. 6206, for information.

# Professional Activities

ECONOMIC DEVELOPMENT LAB

Frank Brown is a member of the Community Advisory Council of the Correctional Facilities and Services Committee of the State Bar of Georgia and serves as an instructor in courses to help inmates learn what will be expected of them when they return to the world of work.

Art Brown was a panelist on "Strategies for Providing Technical Assistance to Women and Minorities in Business" at the National Association of Management Assistance Centers Conference on July 20 in Atlanta.

Marilyn Black was coauthor of a paper, "National Contributions to Acid Rain," delivered at the recent American Chemical Society National Meeting in Philadelphia.

An article by **Marty Melton**, "Emergency Preparedness Assures Minimal Damage to Personnel, Plant," appeared in the July/August issue of Occupational Health and Safetu.

**Bill Ewing, William Spain,** and **Rachel McCain** presented the asbestos abatement course in Dallas, TX, in July to 66 attendees from 18 states. Spain also helped teach a course on "Safety and Health Program Assistance" in St. Petersburg, FL.

Larry Edens was graduated in August from the Economic Development Institute at the University of Oklahoma, while Sherman Dudley, Bill Darley, and Phil Loveless completed their second year of this three-year professional development program of the American Economic Development Council.

#### **ELECTROMAGNETICS LAB**

Papers recently presented by **John Gilmore** include: "Image Understanding through Artificial Intelligence Techniques, Conference on Infrared Physics, Zurich, Switzerland, July 27; "Automatic Route Planning in Autonomous Vehicles" and "A Survey of Air Targeting," International Conference on Pattern Recognition, Montreal, Canada, July 31; "Expert System Control of Autonomous Airborne Vehicles," Unmanned Vehicle Conference, Washington, DC, August 1; and "Artificial Intelligence in Automatic Target Recognizers" and "Target Analysis of the Third Kind: Airborne Vehicles," Society of Photo-optical In-Society of Photo-optical Instrumentation Engineers (SPIE) Digital Image Processing Symposium, San Diego, CA, August 21

Marshall Weathersby presented two papers at the SPIE 28th International Technical Symposium on Optics and Electro-optics in San Diego on August 23: "An Experiment Quantifying the Effect of Clutter on Target Detection," coauthored with Dave Schmieder, and "Infrared Flight Simulation (Ising Computer Generated Imagery," coauthored with former staffer Mark Finlay.

#### ELECTRONICS &

#### COMPUTER SYSTEMS LAB

**John Mills** recently shared an award from NASA with Allan Pierce (Mechanical Engineering) and W. G. Hadden (Texas

A&M) for a brief, "Sound-Burst Generator for Measuring Coal Properties."

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ENERGY & MATERIALS SCIENCES LAB

At the NASA Solar Dynamic Power Systems Workshop held in Houston, TX, August 1-3, **Tom Brown** gave a paper on "Concepts and Research and Development Needs for Concentrating Solar Thermal Power Systems in Space."

At the National Heat and Transfer Conference and Exhibition recently held at Niagara Falls, NY, Paul Mackie gave a paper on "In-Situ Emissivity Measurements with a Four-Wavelength Infrared Pyrometer," coauthored with R. S. Zabor and W. S. Lewis, and Doug Neale gave a paper on "Water Gas Production with a Solar Thermal Direct Flux Chemical Reactor," coauthored with Bob Cassanova.

#### OFFICE OF THE DIRECTOR

Jim Wiltse is the author of three new articles: "Millimeter-Wave Radar Features Unique Characteristics and Designs" appeared in the May issue of Microwave Systems News; "Millimeter-Wave Sensors Technology" was featured in the Summer issue of Military Technology; and "History of Millimeter and Submillimeter Waves" will be published in the September IEEE Centennial Special Issue of IEEE Transactions on Microwave Theory and Techniques. He also was a session chairman at the IEEE International Microwave Symposium in San Francisco in June.

#### RADAR & INSTRUMENTATION LAB

Nick Currie led the RAIL staff in August in presenting a short course on "Techniques of Radar Reflectivity Measurement" to 52 students. The text was a book by the same name, published in April by Artech House. Currie edited the book, which had the following coauthors: Joe Bruder, Archie Corriher, George Ewell, Bob Hayes (retired), Margaret Horst, Gene Knott, Maurice Long (retired), Jim Scheer, Bill Steinway (former employee), Bob Trebits, and Mike Tuley.

#### SYSTEMS & TECHNIQUES LAB

At the IEEE Antennas and Propagation Society 1984 International Symposium in Boston during the week of June 24, Alton Dunn presented a paper entitled "Axial Ratio Measurement with a Variable-Polarization Reference Antenna," and Larry Corey gave a paper entitled "Modeling Triangularly Packed Array Antennas Using a Hexagonal FFT." Don Bodnar participated in the APS Administrative Committee meeting and chaired the IEEE Antenna Standards Committee.

#### **TECHNOLOGY APPLICATIONS LAB**

Craig Wyvill presented a paper entitled "An Assessment of the Potential for Water Reuse in the U.S. Pulp and Paper Industry" at the Water Reuse Symposium III in San Diego on August 27.

Jim Walsh was invited to serve as one of three panel chairmen at a workshop on standards in biomass sponsored by the National Bureau of Standards on August 1-3 in Gaithersburg, MD.

# EES to Develop New Solar Materials

One of the greatest problems holding back the application of passive solar technology to buildings is finding a practical means of storing solar energy for



Dan O'Neil

release when the sun stops shining, as at night. Methods currently used are costly and severely restrict building design and construction.

New materials being developed in a U.S. Department of Energy-funded project at EES could break through these design and cost barriers to widespread adoption of passive solar energy technology in buildings. The new materials are expected to result in much cheaper and more efficient passive solar heating systems than are possible with the bulky materials and structures commonly used today, such as brick, stone, masonry and water-filled units.

The Georgia Tech project will focus on two proprietary approaches, currently under patent review, for the storage of thermal energy in the comfort range of homes and buildings. According to Principal Investigator Daniel O'Neil of the Energy and Materials Sciences Lab, the advanced materials being developed at EES are composites of thermoplastics and ceramics. They are intended for structural applications such as walls, ceilings and tiles, as well as for thermal energy storage. The structural strength and dimensional integrity of the building materials will be retained during passive solar heating and cooling cycles.

On the basis of a cost-to-volume strength ratio comparison, Dr. O'Neil forecasts that the Tech-developed materials will show a 2-to-1 advantage over comparable conventional building materials, while providing a five to tenfold advantage in thermal energy storage capacity.

Phase One has been funded as a 12-month feasibility study, while Phase Two is expected to result in engineering development of about four designs. A demonstration phase also is projected which will involve commercialization of the designs with private sector participation.

The EES project is one of six contracts issued by DOE's Passive and Hybrid Solar Energy Division following a nationwide solicitation for new and innovative concepts in passive solar energy.

#### MINICOMPUTER NEWS

The VAX 11/780s at the Electronics Research Building and at the Cobb County Research Facility now have a 56 kilobit connection. This high-speed Digital Data Service line lets users work on a remote machine as easily as on a local machine, with effective throughput of 9600 baud whether local or remote.

This dataline presently is used with DECNET, Digital Equipment's networking for the VAX 11/780s. Users logged on their local VAX can use the SET HOST (node) command to log on the remote machine. This capability should be helpful in allowing users to switch to a lightly loaded VAX to do their work. File transfers are quickly done, so remote development can be used, but results still can be printed or delivered to local sites.

The Cobb County VAX, in particular, often has only a handful of users compared with the many on the ERB VAX. Establishing an account on both VAXes can allow for flexibility and balancing of computer usage.

In the future, this 56 kilobit line will be used to support the Ungermann-Bass implementation of Xerox Corporation's

ETHERNET. This will not only maintain the link between the ERB and CCRF VAXes, but also tie them into the campuswide ETHERNET, making the VAXes easily accessible from many locations.

This new inter-VAX connection is an important link in our network. To discuss how it can be used in your group's program development and applications, call 894-3175 (ERB) or 424-0898 (CCRF).



SEL awarded Lydia Geeslin a Master of Maternal Logistics and Linguistics degree at a retirement reception on August 23. Lydia retired August 31 after 21½ years at Georgia Tech, about half of them at EES. She had been an administrative secretary at SEL's Cobb County location since January 1979. Lydia and her husband are retiring to Florida.

## **TAL Training News**

Training programs are an important component of the activities of the Technology Applications Lab (TAL). Here are some of the latest offerings:

The Federation of Arab Scientific Research Councils sent 11 administrative leaders of research departments and laboratories in 11 Arab countries to Georgia Tech July 23-August 3 to participate in a training program on Management of Research and Development and Information Centers. In addition to hearing lectures by 12 Georgia Tech research leaders and professors, they visited various industries, government agencies, and research institutes. Bob Kyle coordinated the program.

The Industrial Education Department (IED) hosted its 17th Annual Industrial Training Conference at Jekyll Island on August 13-16. More than 100 industrial trainers and human resources personnel heard 15 industrial leaders discuss such topics as ergonomics, quality control, interactive video in training, robots in industry, and employee motivation.

IED also recently conducted a three-day training program in modern techniques of supervision for more than 90 first-line supervisors at the Ford Motor Company auto assembly plant in Hapeville, Georgia.

Finally, the Technology Transfer Branch is assisting the U.S. Department of Energy, along with Battelle Pacific Northwest Laboratory, in conducting a High-Temperature Waste Heat Recovery Conference in Chicago on September 28.

# Strictly Personal

ECONOMIC DEVELOPMENT LAB

Willie Coleman Duncan and Donna Fong-Taylor have resigned.

The Analytical Laboratory has two new chemists, **Zhanna Geskin** and **Berta Shteynberg.** 

Industrial Extension Division: **Eliot Price** is a new research associate II in the Douglas office. **Keith Nelms** is a new research engineer I in the Atlanta office, transferring from TAL.

ELECTRONICS &

COMPUTER SYSTEMS LAB

Barbara Call has been promoted to administrative secretary in the Command and Control Division. Joan Bunch and Tommy Thompson have resigned.

**ENERGY & MATERIALS SCIENCES LAB** 

Welcome to **Jerry Lett**, research associate II, and belated welcomes to **John Bearden**, research engineer II, and **Dave Henderson**, research engineer I.

**Dan O'Neil** has transferred from the Technology Applications Lab.

RADAR & INSTRUMENTATION LAB

Faye Carpenter has transferred from SEL to work in the Instrumentation and Measurements Division.

SERVICE GROUPS

Accounting: **Nancy Kelly** lost her mother on August 9.

Facilities Management: Brenda King and Jerry Hill (EML) were married on August 11.

Personnel Services: Welcome to **Diane Trimble**, personnel assistant I. **Debbie Coleman** is transferring from the Office of Computing Services as an administrative assis-

tant. Kay Clark has resigned. Cynthia McCree has transferred to OOD as administrative secretary for the new Training and Staff Development Program. Chris Gaddis was married on August 4 to Tracy Smith (GIT Personnel).

Research Property Management: Sandra Alford has transferred from OCA as an administrative assistant.

Supply Services: **Diane Kelly** was married on August 5 to Mark Collins.

SYSTEMS & TECHNIQUES LAB

**Constance Green** has transferred from SEL to the Microwave Systems Division.

David Price has been promoted to research technologist I.

Tom Vincent has resigned. SYSTEMS ENGINEERING LAB

New employees are **Rod Beard**, research engineer I, and **Betty Mitchell**, word processor operator.

Former GRAs **Dennis Folds** and **John Scholz** have received professional appointments as research scientist I and research engineer I, respectively.

SEL recently said good-bye to Adrienne Harrington, Bill Weatherford, William Allen, and Jon Gedymin.

Alexis and **Steve Livesay** had a daughter, Elizabeth, on July 18. Barbara and **Mike Linebarger** had a son, Thomas, on July 9.

Ron Strickland was married to Suzynne Beliam on August 20.

SEL has started a new outstanding employee monthly award program. Honorees for July were **Robin Poole** (Cobb County) and **Neil Lareau** (ERB).

#### **Station News**

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