Station News

Georgia Tech Engineering Experiment Station

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EES Gains Visibility at Hanover Fair

Thousands of Europeans got a chance to sample EES's research activities at the world's largest industrial exposition in Hanover, West Germany, April 13-20. Four labs plus the EES-affiliated European Research Institute of Ireland participated in a Georgia Tech exhibit that included several other campus units.

The Tech display received excellent exposure as one of eight booths in the U.S. Research and Technology Pavilion. The corner location, adjacent to the NASA exhibit, brought in visitors at the rate of at least 100 per hour, said Nick Faust of the Electromagnetics Lab. His demonstrations of Landsat capabilities were a popular feature. "The Eastern Europeans, in particular, were very interested in the new Landsat 4 high-resolution data," Faust said. "Besides Landsat maps and computer data on American and German areas, we showed a videotape of flight simulations that also was popular. ERDAS, an Atlanta land management and remote sensing company, provided the image processing station and computer software for us to display the Landsat data."

Also in great demand were the GIT Admissions videotape and videotapes of Georgia Tech research, particularly radar, according to Elinor Plowden of the Office of Contract Administration. In addition, the Radar and Instrumentation Lab had display panels on radar cross-section reduction and high-power millimeter wave technology. Plowden summed up Georgia Tech's participation in the fair in this way: "We had excellent exposure to European industrial representatives and government officials interested in technology transfer. Significant interest also was shown by people wishing to study at Tech — especially graduate and post-doctoral students."

There also was high interest in Tech's intensive English and continuing education courses. Cliff Bragdon of Continuing Ed said some of the more popular courses may be packaged and presented at Hanover next year; EES offerings may well be among them.

The Technology Applications Lab highlighted its international development, agricultural processing, textile technology, and robotics activities at the fair. TAL Director Sid Firstman commented on the number of people who came by the booth looking for technology to license. "I feel that Tech should exploit the strong potential for licensing its technology in Europe," he said.

An advantage mentioned by Hans Spauschus of the Energy and Materials Sciences Lab was the opportunity to develop meaningful contacts through one-on-one discussions with visitors. He talked to several people interested in materials characterization and advanced ceramic materials. The scale model of EMSL's solar thermal research facility, constructed by Martha Clayton, was another highlight of the Georgia Tech exhibit.

EES Associate Director Jim Wiltse commented on the significant exposure and opportunity to become known that the fair provided to the European Research Institute of Ireland (ERII), which is seeking to break into the European applied R&D market.

All participants agreed that the Tech booth was attractively designed and executed. Director of Publications Tom Vitale had overall responsibility for the exhibit, with major assistance from Elinor Plowden and Mary Ann Burke.

The entrance to Georgia Tech's booth at Hanover Fair.

TAL Holds Successful Photovoltaics Seminar

The Technology Applications Lab, in conjunction with the Georgia Power Company, hosted a Seminar on Utility Issues and Dispersed Photovoltaic Generators on May 3-4 at the Sheraton Airport Inn in Atlanta. Ninety-five persons representing utility companies, universities, the Department of Energy, Jet Propulsion Laboratory, Sandia National Labs, Oak Ridge National Lab, and several equipment manufacturers attended the seminar. Dr. George Vachtsevanos and Larry Banta of TAL coordinated the seminar. Dr. A. P. Meliopoulos of Electrical Engineering presented results of research he is performing jointly with TAL in a paper entitled "Protection and Safety Issues from the Southeast Residential Experiment Station Perspective."

TAL Helps Central American Industry Conserve Energy

The Technology Applications Lab (TAL) has negotiated a two-year, $485,000 contract with the Instituto Centroamericano de Investigacion y Tecnologia Industrial (ICAITI) for a regional industrial energy efficiency project. TAL will perform two functions in Central America and Panama:

- Lend direct assistance based on past experience with industrial energy conservation programs
- Train ICAITI staff in energy audits and conservation measures to the point of full self-sufficiency and independence from the need for continued EES support

A resident team, consisting of Cecilio Gracias and Mark Oven, will be headquartered in Guatemala. Other, short-term technical assistance will be provided as needed.

Project personnel will work with ICAITI in the following activities:

- **Energy Audits:** a series of technical services affecting how a plant uses energy, including a diagnosis of energy consumption and how it can be reduced
- **Field and Pilot Demonstration:** actual in-plant installations of energy reduction measures and equipment
- **Energy Efficiency Seminars:** a series of one- to two-day presentations to plant management and engineering personnel in the Central America and Panama region to inform them of opportunities to reduce energy consumption and of services available under the project
- **Exhibits:** displays of energy-conserving technology, audiovisual materials, and related presentations aimed at stimulating an awareness of the need for and means of conserving energy
- **Training:** to develop the technical capacity of ICAITI staff to carry out project activities and to train ICAITI staff to transfer that capacity to national-level counterparts

Georgia Tech and ICAITI have worked together many times over the past ten years. Thus, they have a rapport which should be beneficial to what TAL considers an interesting and challenging project.

Phillip W. Potts

The Industrial Extension Division field office secretaries paid their annual visit to the campus April 28-29, getting a firsthand look at the people and activities they deal with from afar the rest of the year. From left to right, they are Sara Marshall (Rome), Darlene Fischer (Gainesville), Mamie Clark (Albany-top), Peg Zabriskie (Macon-bottom), Jerry Howland (Augusta), and Cheryl Cleveland (Douglas). Not shown: Helen Blum (Savannah) and Shirley Brown (Carrollton). (Photo by Pat Stone)

Radar Course Draws Large EES Crowd

Approximately 85 EES staff members are enrolled in the special extended version of RAIL's Principles of Modern Radar short course. The course, long a Continuing Education staple, is being offered for EES employees only by popular demand. It began the first week in April for an eight-week run.

Since participants are about equally divided between campus and Cobb County, each lecture is presented in both the Baker Building auditorium and the Cobb County Research Facility auditorium. Lectures are given twice a week for each group, from 4 to 6 p.m. Laboratory demonstrations and experiments are given only once.

"The Radar Course has been unusually popular this year," said Course Administrator Jerry Eaves. "Normally we present it once a year, in November, to 75 people, but in the last six months, we have taught approximately 350 people. Because so many were turned away in November, we repeated the course in January with 35 Georgia Tech and 35 outside participants. At the request of Scientific Atlanta, we put on a special condensed version at their facility in December, attended by 25 students. Redstone Arsenal also asked for an on-site course, which we conducted in March with 90 enrolled."

Profession

ECONOMIC DEVELOPMENT LABORATORY

Robert Springfield addressed the Southern Apparel Contractors' Association in Panama City, Florida, April 29 on "How Southern Apparel Contractors Can Be Competitive Anywhere."

Occupational Health and Safety has accepted for publication an article by **Phil Williams, Mike Luster,** and **Paul Middendorf** entitled "Area Samples: Problems in Accepting Sample Sites."

Dianne Lanier has been elected vice president of the Atlanta chapter of the American Marketing Association. As newly elected president of the Georgia section of the American Industrial Hygiene Association, **Phil Williams** attended a national Executive Leadership Conference in Akron, Ohio, April 20-21.

Sherman Dudley and **Rudy Yobs** (OOD) represented the Georgia Productivity Center at a national meeting of productivity organizations in Long Beach, California, April 28-30. Dudley also represented Georgia Tech at the University of Illinois Advisory Committee meeting on Dissemination of Federal Laboratory Technology to Small and Medium-sized Industry on May 3.

Bill Darley participated in a panel discussion on Resources for Small Business in [illegible]e, Georgia, on April 13. Sponsored by the Rome Area Chamber of Commerce and the Small Business Consortium, the meeting was part of a series designed to combat the high rate of small business failures. Darley also lectured on "Application of Research and Resource Materials" at Tech's Basic Industrial Development short course on March 29.

At the Sampling Methods and Statistical Analysis in Power Systems Load Research short course coordinated by Industrial and Systems Engineering in early May, **Bob Lann** spoke on "End Use Energy Forecasting Models."

Anthony DeCurtis lectured April 19-20 in a Continuing Education course on Effective Technical and Professional Writing; he also coordinated the course. His review of the new novel by noted British author Anthony Burgess appeared in the Louisville *Courier-Journal.*

ELECTRONICS & COMPUTER SYSTEMS LAB

Patrick Elam and **Jeanne Balsam** presented a paper on "V&V's Role in a Computer System's Life Cycle" at the 5th Annual International Conference on Computer Capacity Management held April 18-21 in New Orleans.

Cliff Burdette presented a seminar on hyperthermia on April 24-26 at the [illegible]. Anderson Hospital and Tumor Institu[illegible]n Houston, Texas. At the 5th Annual Bioelectromagnetics Society Meeting in Boulder,

al Activities

Colorado, he will co-chair a session on June 15 on Dielectric Properties/Dosimetry and present a paper, coauthored by **Mike Studwell**, on "Dielectric Measurements of Solid Tumors through the Intact Skin." Burdette also has been invited to submit a paper at a special session on Electromagnetic Techniques in Medical Diagnostics during the International Microwave Power Symposium.

ENERGY & MATERIALS SCIENCES LAB

Kathryn Logan participated in the annual conference of the Army Military Affiliate Radio System (MARS), held April 16 in Atlanta. Logan has been a member of the MARS administrative staff for the past four years.

OFFICE OF THE DIRECTOR

Jim Wiltse was a major lecturer at a seminar on Commercialization of University Research held at the University of Tennessee Space Institute in Tullahoma on May 23.

SYSTEMS ENGINEERING LAB

Bob Zimmer attended the AOC Western Region EW Technical Symposium in San Antonio, Texas, April 17-20. While there, he visited the Electronic Security Command and the Air Force and Joint EW Centers.

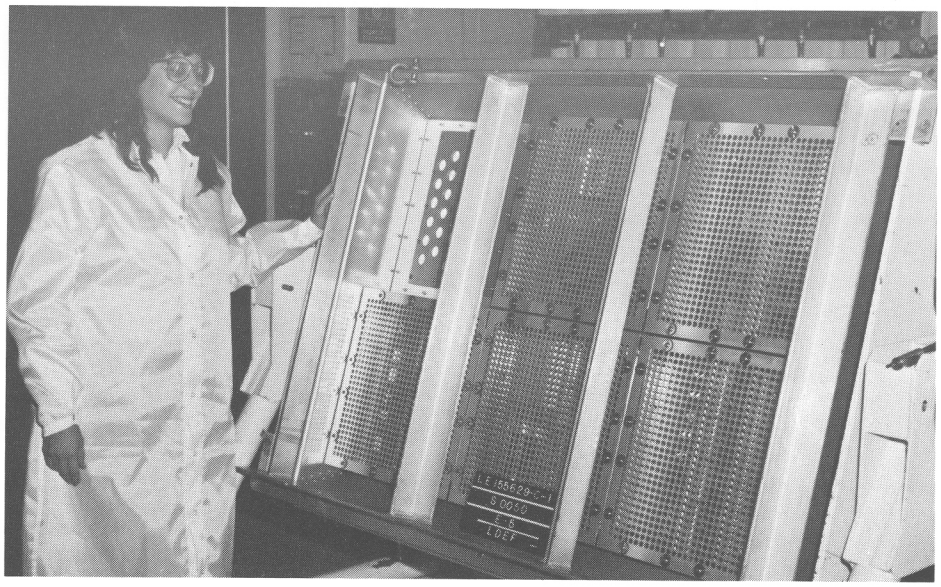
TECHNOLOGY APPLICATIONS LAB

At the Industrial and Institutional Wood Energy Conference sponsored by the Mississippi Department of Energy and Transportation on May 17-18, **Tom McGowan** presented papers on "Wood Gasification," "Wood Fuel Processing Systems," and "Wood Fuel Properties," and **Bill Bulpitt** gave papers on "Wood Handling, Storage and Emission Control," "Wood Combustion," and "Design Considerations for Wood-Fueled Systems." McGowan also presented a poster paper on "Experimental Textile Drying via Wood Combustion" May 10-12 at a meeting in Gatlinburg sponsored by the Oak Ridge National Laboratory.

Jim Clark presented a paper entitled "Feasibility Analysis of a Large, Industrial, Salt-Gradient Solar Pond" at the Wind/Solar Energy Conference in Kansas City April 25-26.

Craig Wyvill and **Ralph Lamade** assembled and manned an exhibit of TAL's many research activities for the poultry industry at the Georgia Poultry Federation Annual Spring Meeting at Callaway Gardens April 15-16.

At the Industrial Energy Conservation Technology Conference sponsored by the Texas Industrial Commission in Houston April 1[illegible], **Bo Hendrix** chaired a session on Energy Conservation in the Textile Industry and presented a paper on "Research Needs and Priorities for Textile Process Electrification."



Marie Fair stands beside the NASA Long Duration Exposure Facility panel that will house the experiment she designed while a student assistant in the Electromagnetics Lab. Her experiment will travel aboard a Space Shuttle next year. (Photo courtesy of NASA-Langley)

Space Shuttle To Loft EML Student-Designed Experiment

An experiment designed by an EES student assistant will be aboard when the first long-duration exposure mission to be flown by a Space Shuttle takes place in April 1984.

Marie Fair, who received her Bachelor of Industrial Engineering degree in December 1982, began developing the experiment in 1978 while working as a student assistant for Don Blue in the Electromagnetics Lab (EML). The experiment, called Active Optical System Components (AOSC), began as a study activity between EML and the National Aeronautics and Space Administration (NASA).

Fair's experiment will expose basic elements of electro-optical systems to the space environment for approximately 12 months. It then will be returned to Earth and analyzed to see how the components held up during the long exposure. The samples to be exposed include lasers, crystals, detectors, paints, filters, mirrors, window samples, and film.

The experiment will determine how well special termperature-protective coatings will hold up under long-term space exposure, as well as the effects of this exposure on the performance of the components themselves. Environment hazards peculiar to space include radiation-induced discoloration, electrically active flaws or distortions, and abrasion or cratering of surfaces caused by meteoroids and cosmic dust.

Fair acquired 163 components for the AOSC experiment, some supplied by NASA, others by component manufacturers. They are bolted onto a six-panel tray. The experiment recently passed flight certification tests at NASA Langley Research Center and is in storage until time for its shipment to the Kennedy Space Center. There it will join 47 other experiments from nine countries on the Langley-designed Long Duration Exposure Facility (LDEF).

The LDEF will be placed in Earth orbit by the Space Shuttle Challenger on its fifth flight. After about a year in space, the LDEF will be retrieved by the Orbiter Atlantis on its maiden voyage. Once back on Earth, the experiments will be returned to the experimenters for analysis.

In addition to working for EML while attending Georgia Tech, Fair was a student assistant in the Research Communications Office for several years.

(Fair's experiment was the subject of a feature article in the March 11, 1983, issue of *Langley Researcher,* upon which this article is based.)

EW Program Review Held

Over 60 Air Force, Army and Navy personnel attended the Fifth Annual Electronic Warfare Program Review, held at the EES Cobb County Research Facility on May 3-6. The Review is hosted by the Systems Engineering Laboratory and sponsored by the Electronic Warfare Division of the Avionics Laboratory at Wright Patterson Air Force Base for the multimillion-dollar Electronic Warfare Techniques Analysis Program.

Since the original meeting in 1979, the Review has expanded each year. Currently, it includes presentations on almost all of the EES electronic warfare programs, with participation by all five electronics laboratories. Approximately 50 presentations were made over the 3½-day period.

The purpose of the EW Annual Review is for information exchange: to discuss the objectives and/or results of ongoing or recently completed electronic warfare efforts with interested Department of Defense personnel, to reduce duplication of effort, and to solicit constructive criticism and recommendations for expansion and application of the results. Charles Ambuske, the Air Force program engineer for the EW Techniques Analysis Program, and Lloyd Lilly of the Systems Engineering Lab, the EES project director for the program, jointly plan and coordinate these classified reviews each year.

Lloyd Lilly

Enjoying a break during EES's annual EW Program Review are Lloyd Lilly (far left) and Dr. James Wiltse (far right) of EES and four visitors from Wright Patterson AFB (from left to right): Charles Ambuske, Col. Edward Thomas, Dr. Charles Krueger, and James Smith. (Photo by Pat Stone)

Hello, You Out There!

One of the EES Service Group managers has asked what the Service Groups can do to help promote EES. That's a good question, and we'd like to throw open the pages of *Station News* for reader response. If you have innovative ideas as to how not only the Service Groups, but also how any EES employee can promote the Station beside the obvious ways used in selling our research services to potential clients, send them in to: *Station News*, c/o Research Communications.

Strictly Personal

ELECTRONICS & COMPUTER SYSTEMS LAB

Gayle Hudson has transferred to EDL to replace **Joan Meeks** as administrative assistant.

Betsy and **Larry Jackson** welcomed a son, Benjamin, born April 24.

MINICOMPUTER SERVICES FACILITY

Welcome to **Michael McGraw,** research scientist I.

John Lee and Tsuey Hwa were married on May 8.

RADAR & INSTRUMENTATION LAB

New employees are **James Page,** electronics technician I, and **Barbara Cranfill,** word processor operator, who transferred from Nuclear Engineering.

SERVICE GROUPS

Rober Kok is the new assistant manager of Personnel Services.

Harriett Linton, former bookkeeping supervisor in Accounting, died of cancer on March 23. She had retired in June 1980 after 19½ years at EES.

SYSTEMS & TECHNIQUES LAB

Rhonda Okerberg and **Vickie Fennell** were cited for being exceptionally knowledgeable and aware of security procedures during the industrial security inspection conducted at the Cobb County Research Facility in March. This is the first time employees have been mentioned in official correspondence from the Defense Investigative Service.

SYSTEMS ENGINEERING LAB

Steve Abel and **Robert Crisler** resigned in April.

Carol and **Kenny Trussell** welcomed a girl, April Michelle, on March 31.

SEL has two softball teams this season. The "Old Pros" (ESM Division) play at Cobb County each Wednesday, and the "Killers" (DSD Division) play each Monday in the campus intramural league. For details, contact **John Parish** at Cobb County (ext. 9633) or **Alan Harris** at the ERB on campus (ext. 3594).

TECHNOLOGY APPLICATIONS LAB

Sherry Edlin and **Mike Smith** were married on May 1.

Beadie Lloyd has transferred from Personnel Services to replace **Queen Buford** as secretary to the lab director.

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