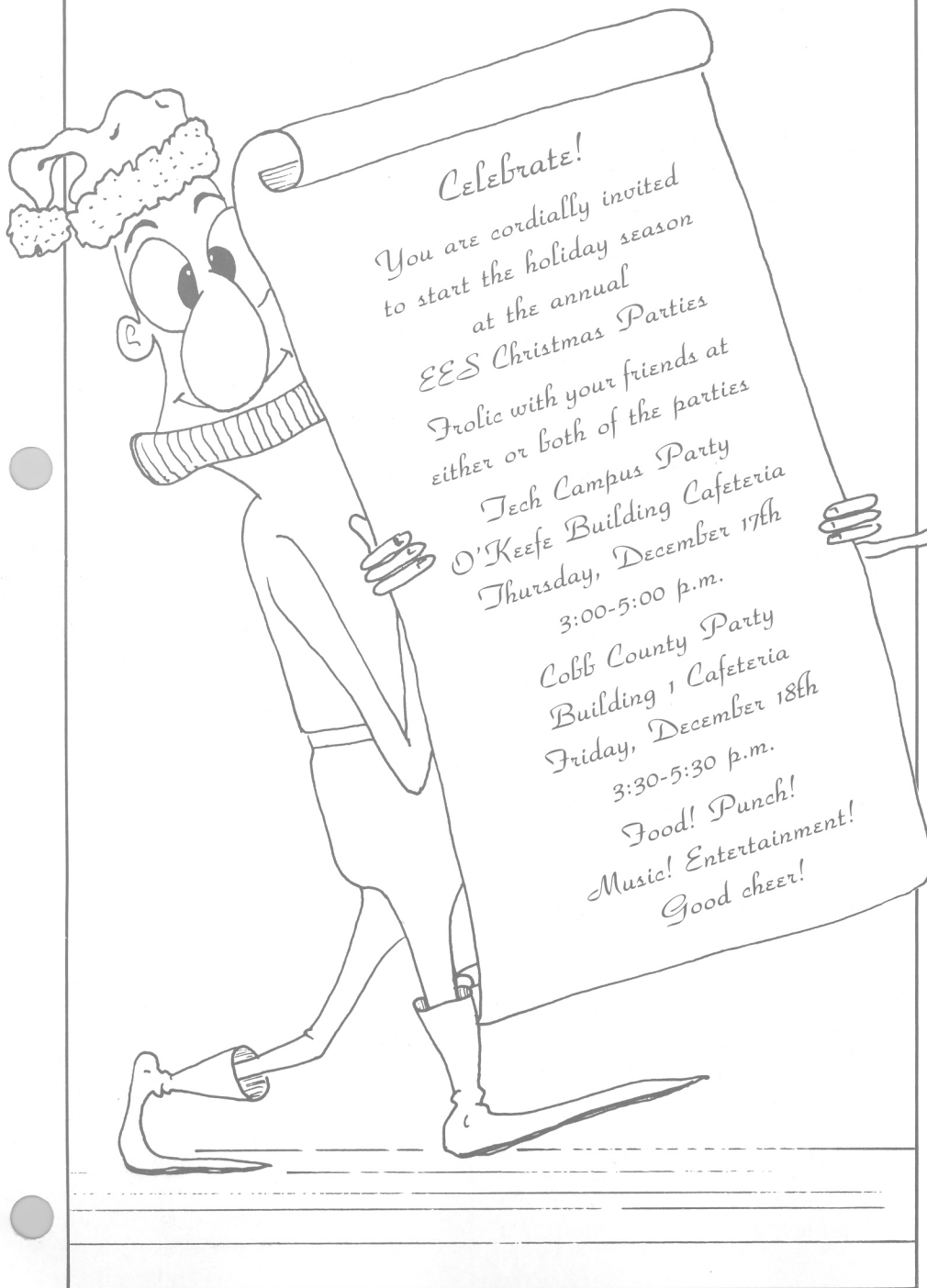


Station News

Georgia Tech Engineering Experiment Station

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NOVEMBER 1981



TUCC Program Helps Minority Enterprise

Since 1977, the Technology Utilization and Commercialization Center (TUCC), a program within the Economic Development Laboratory, has been working to stimulate the growth of minority-owned firms and minority entrepreneurship in the Southeast. The center's efforts were recently rewarded when the National Business League presented one of four Berkeley G. Burrell awards for minority enterprise development to the Engineering Experiment Station. **Dr. Donald J. Grace** accepted the award on behalf of Georgia Tech.

"We were highly pleased to receive the award," said TUCC Director **Ed Bethea**, adding that the program will strive to maintain "the quality of excellence the Burrell Award represents."

TUCC is one of eight centers across the nation funded by the Minority Business Development Agency. It seeks to identify and evaluate new or underutilized technologies that minority firms can manufacture or distribute. To do this, TUCC must serve as the liaison among three groups: aspiring minority enterprises and inventors, EES researchers who perform the technical evaluations of new technologies and product concepts, and the TUCC advisory council, composed of representatives from major industry, government and education.

The TUCC advisory council will hold its annual workshop/seminar in Atlanta November 13. Dr. Cleveland Dennard, president of Atlanta University, will be the dinner speaker. TUCC will give awards to council members making outstanding contributions to

(Continued on page 2)

AOC Symposium

EES Director **Don Grace** brought back good news from the Department of Defense (DoD)/Association of Old Crows (AOC) 18th Annual Electronic Warfare (E-W) Symposium and Convention, held in Washington October 12-15.

"There are significant indications that DoD is moving toward putting more R&D funding into universities," Grace said. "Some industrial firms are considering doing the same."

The AOC also is pushing to upgrade the technical content and quality of its *Journal of Electronic Defense*, and will publish it monthly rather than bi-monthly, beginning in January. Said Grace, who is a charter member of the Editorial Advisory Board: "I will be happy to work with any potential authors here at Georgia Tech."

Attending the conference from the EES Director's Office were Grace, **Jim Wiltse**, and **Jerry Carey**. All three men are members of the AOC E-W Technical Study Committee, which is getting organized to study seven major threat areas. Grace is assigned to the radar sub-committee, Wiltse to the missiles sub-committee, and Carey to the E-W platforms sub-committee.

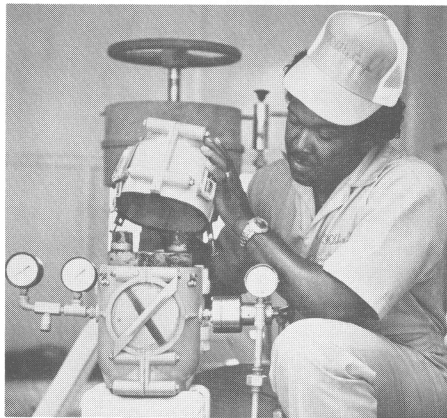
At the symposium, Carey received the AOC Board of Directors' Silver Medal award for his contributions to enhancing the national defense posture in E-W. He also participated in a panel discussion, "The Military View on Restoring the Balance of Power."

Other EES personnel at the AOC Symposium included **Archie Corriher**, current president of the Peachtree Roost, and **Bob Zimmer** and **Jim Gibbons** of the Systems Engineering Lab.

Name Change

The name of the Research Public Relations Office has been changed to RESEARCH COMMUNICATIONS OFFICE. The new name better describes the office's purpose—to communicate the Georgia Tech research story internally as well as to the public.

This mission encompasses publications such as newsletters, brochures and booklets; slide shows; exhibits and displays; and news media contacts.



Kibbie Pillette demonstrates the gas/oil well pressure leak early-warning and control device he developed. EES provided numerous product development services to help him commercialize his invention.

TUCC, Continued

the program and assisting TUCC in commercializing new technology.

The program's greatest success thus far has been the commercialization of the Kibbie Kapsule, a device that detects pinhole leaks in producing oil wells, thereby preventing hazardous and costly spills. TUCC worked with Kibbie Pillette, inventor of the Kapsule, for three years, monitoring product development, advising on design changes, arranging for product demonstration by Mobil Oil, and assisting in negotiations for financial backing. Earlier this year, the Urban National Corporation, a TUCC advisory council member, invested \$150,000 in the Kibbie Corporation's efforts to bring the Kibbie Kapsule to the marketplace and established a line of credit for the firm of an additional \$150,000.

TUCC also has been working with the Plant Guardian, a horticultural device designed to improve plant care, and Soundmate, a remote control device for processing the sound output of amplifiers and receivers.

The successes of the TUCC program provide important economic and social benefits. As Ed Bethea states it: "The goal of the program is to help minority firms expand into growth industries and new markets and to help minority inventors get their products into the marketplace. This, in turn, creates more jobs everywhere — but especially in minority communities — and enhances the contributions made by minority firms to the nation as a whole."

Anthony DeCurtis

Solar Cooker Is H

The fame of **Rick Steenblik's** spiral solar concentrator has spread far and wide. It has been featured in 13 domestic and two foreign periodicals so far in 1981. A photo or diagram of the concentrator appeared on the cover of six of these magazines.

The cover of *Science & Mechanics' Special Energy Issue* (Fall 1981) declares: "Solar Breakthrough! Fabulous Spiral Concentrator with 20kW Power Potential for Home Use."

In commenting on the high cost and complexity of conventional point or dish type concentrators, *Solar Energy Digest* (August 1981) lyricizes: "This problem, in our view, has now been brilliantly solved by the Georgia Tech Spiral Concentrator, . . . which promises to not only reduce the cost of point concentrators drastically, but to provide us with a concentrator that is superior in several other respects."

"Invented by R. A. Steenblik while a student at Georgia Tech, the device is based on Fresnel principles and is formed by slightly coiling a spiral cut from a sheet of flat material and attaching it to a planer (flat) frame at mathematically determined locations."

Staff Members

ECONOMIC DEVELOPMENT LAB

An article by **Phil Williams** and **William Spain** will appear in the December issue of the *American Industrial Hygiene Association Journal*. Titled "Suspected Arsenic Poisoning During the Restoration of a Large Cyclorama Painting," the article discusses work performed at the Atlanta Cyclorama.

Judi Komaki participated in a colloquium, "Role of Performance Consequences in Work Motivation," at Virginia Polytechnic and State University, Blacksburg, in October.

News from area office directors: **Harris Johnson** and **Bill Darley** recently completed the General Engineering short course. **George Lee** attended a "Machinery Vibration Analysis" seminar conducted at Bruel & Kjaer Instruments near Boston.

ELECTROMAGNETICS LAB

Nick Faust spoke on "Non-Real-Time Imagery Overview" at the Lockheed/Georgia Tech Man/Computer Interaction Symposium at the Atlanta Hilton.

J. J. Gallagher is general chairman of the IEEE International Conference on Infrared and Millimeter Waves to be held December 7-12 in Miami Beach.

Hot News Item

After listing more than a dozen advantages of the device, SED sums up: "Personally, we think that this is one of those inventions which may revitalize an industry... just as Eli Whitney's historic cotton gin..."

Georgia Tech has applied for patents on Steenblik's solar collector, which seems to have virtually unlimited applications. Possibilities simple enough for less-developed countries include cooking, water heating and pumping, absorption refrigeration, pottery firing, and crop drying. Industrial uses might include thermal or photovoltaic power generation, enhanced oil recovery, industrial process heat systems, and outer space power and propulsion systems.

Almost anyone can make a backyard solar cooker with Steenblik's computer-designed plans, a few dollars' worth of materials, and simple hand tools.

Steenblik, a research engineer I with EMSL, has appeared on WAGA-TV's PM Magazine, and a spot on the Mr. Wizard science show is upcoming. Radio publicity includes National Public Radio and a live interview on a Seattle, Washington, station.



Nick Faust, EML, shows Landsat images of Beijing (China) to part of a group of 46 Japanese businessmen who recently toured Georgia Tech. Among other foreign visitors touring GIT/EES in recent months were two sets of Japanese journalists, two high-level officials from Ireland, and the United Nations Ambassador of the People's Republic of China. (Photo by Billy Howard).

Present Papers, Attend Meetings

ELECTRONICS & COMPUTER SYSTEMS LAB

Don Clark was elected to the Board of Directors of the IEEE Electromagnetic Compatibility Society.

OFFICE OF THE DIRECTOR

Jim Wiltse was a session chairman at the Optical Society of America Annual Meeting in Orlando on October 30 and at SPIE's Integrated Optics and Millimeter and Microwave Integrated Circuits Symposium in Huntsville on November 19. He also presented a paper at the symposium. At the IEEE International Conference on Infrared and Millimeter Waves, he will present two papers, one of them coauthored by **Jim Schuchardt** of EML.

RADAR & INSTRUMENTATION LAB

Bruce Rakes presented an overview of "Graphics in Computer Modeling" at the Lockheed/Georgia Tech Man/Computer Interaction Symposium in Atlanta.

Robert Michelson and **Frank Williamson** have submitted a symposium paper, "An Indirect Fire Terminal Effects Cue," for publication in the proceedings of the 3rd Interservice/Industry Training Equipment Conference and Exhibition, to be held in Orlando in November.

RAIL attendees at the DARPA/Tri-Service Millimeter Wave Conference in Huntsville last month were **Ed Reedy**, **Jim Echard**, **William Holm** and **Robert Trebits**. Reedy, Echard, **Bill Steinway**, **Gary Lunsford**, **Michael Shannon** and **James Smith** attended the Combat Identification Systems Conference at Fort Monmouth October 27-29.

Stephen Stuk made a presentation on Georgia Tech's radar clutter and multipath modeling capabilities at a meeting of The Technical Cooperation Program (TTCP) Panel W-6 at Aberdeen Proving Grounds, Maryland, October 21.

TECHNOLOGY APPLICATIONS LAB

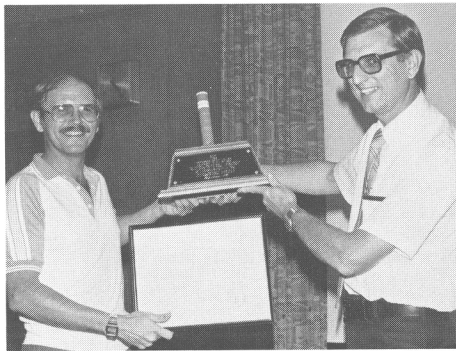
John Adams and **Michael Brown** presented a paper entitled "A Solid Fueled Gas Turbine Cogeneration System for the Mineral Processing Industry" on October 14 at the 4th World Energy Engineering Congress in Atlanta.

LuAnn Rockett and **Larry Banta** coordinated a Workshop on Electrical Energy Management on October 27 with 80 participants. Rockett was academic administrator of a Continuing Education course on "Wood Heater Safety and Installation," held November 12-13.

Zimmer Chairs, EES Coordinates Cybernetics Meet

Robert P. Zimmer, director of EES' Systems Engineering Laboratory, was general chairman of the IEEE International Conference on Cybernetics and Society held in Atlanta October 25-28 at the Sheraton-Atlanta Hotel. The conference operating committee was staffed primarily with EES personnel. They included: **Joanne Green**, SEL, technical program director; **Theodore J. Doll**, SEL, displays and exhibits; **Harry Vann**, EES Facilities Management, registration; **Mark Hodges**, EES Research Communications, publicity; and **Charlynn Stockton** and **Linda Leiker**, SEL, registration.

A number of Georgia Tech faculty and researchers presented papers. **William B. Rouse**, head of the Center for Man-Machine Systems Research at Georgia Tech, presented one of the invited addresses, on the subject "On Models and Modelers: A Comparison of Various Points of View." President **Joseph Pettit** made welcoming remarks to the conference.



Joe Bruder (right) displays the 1980 RAIL Buoy trophy and diploma along with former Air Force Program Manager Ted Lane (left).

Bruder Wins Buoy Award

Joe Bruder is the "extinguished" recipient of the fourth annual RAIL Tethered Buoy Award, presented on September 1 in a hilarious ceremony at the Cobb County Research Facility.

The "coveted" award recognizes the "outstanding" performances of RAIL personnel during a field operation successfully undertaken in the face of overwhelming adversity.

Bruder was the unanimous winner for his misadventures on the "Airborne Millimeter-Wave Backscatter Measurements" program. His most noteworthy accomplishment was having the Georgia Tech radar fail twice during acceptance tests in front of the sponsors. Other memorable moments of panic included discovering that an overzealous employee of one of the sponsors had gunked up all of the radar circuit boards with RTV (silicone caulk) "to make them air-worthy," and finding that the field mount for the calibration reflector had a larger radar cross section than the reflector itself.

Bruder also learned that German cows find styrofoam optical markers a delicacy, and that sheep, cow and pig fertilizer used in German agriculture can be distinguished by smell alone.

Describing these events to the appreciative audience was former USAF Captain Ted Lane, who was Air Force program manager of the airborne test program at the time. Since then, he has left the Air Force and joined RAIL as a senior research scientist.

Other nominees for this year's award were Jerry Eaves, Brian Hudson, Frank Williamson and Gene Greneker.

Personnel Changes

ECONOMIC DEVELOPMENT LAB

EDL has announced several organizational changes. Safety and Health Services has been elevated to branch status with James Burson as head and subdivided into two groups: Safety, led by Stephen Kramer, and Industrial Hygiene, led by Kenneth Smith. Robert Collins leads the Resource Productivity Group, which has been placed in the Industrial Extension Division. The former Applied Research Division is now the Economic Analysis Group of the Business Development Division. Also in BDD, the TAAC, EDA and TUCC programs have been combined into a Management and Technical Assistance Group with Bob Springfield as leader.

June Wilson has resigned as Industrial Extension Division Secretary.

SERVICE GROUPS

Julie Blankenship has replaced Evelyn Crowner as clerk-typist II in EES Accounting. Evelyn has transferred to EML to work for Ray Young.

In Facilities Management, Vicky Bramlett is a new secretary and Daryl Young has transferred from Supply Services. Brenda King, who had major surgery in October, wishes to thank all her friends at EES for their expressions of love and support.

Personnel Services welcomes Pat Burns as its new personnel assistant.

New employees in Supply Services are James Gordy and Lesa Keith. Vic Montgomery left October 20.

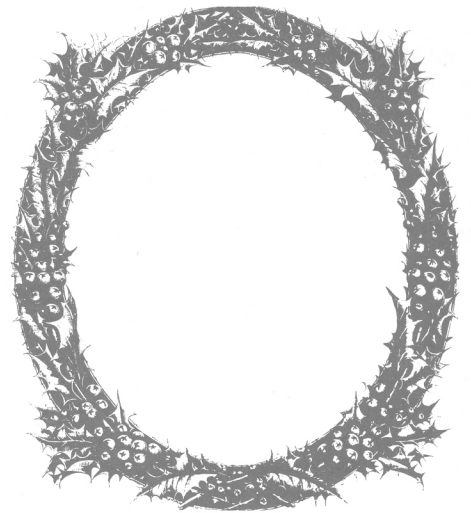
SYSTEMS ENGINEERING LAB

Robert G. Crawford has joined the Concepts Analysis Division as a senior research scientist. Nicholas A. Pomponio is a new research engineer I in the Countermeasures Division. Steven Kaney joined the Defense Systems Division as a research associate I. The Electronic Support Measures Division has gained Senior Secretary Diane Aenchbacher. Electronics Technician Gary Price has transferred to the Systems & Techniques Lab.

SYSTEMS & TECHNIQUES LAB

New employees are Gary Simpson, research engineer I in the Defense Electronics Division, and Jodi Cabena, electronics technician I in the Systems Development Division. Robert Bryans was married on October 24. Ron Yanda has taken a job in Washington, D.C.

MERRY
CHRISTMAS



TECHNOLOGY APPLICATIONS LAB

Welcome to William C. Larson, senior research engineer, who joined the International Division October 1. Departing in September were George Battaglia, James Columbo, Steve Drucker and Arthur Shavit.

Wanda Dennis has graciously consented to be the Station News associate editor from TAL.

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