

STATION NEWS

ENGINEERING EXPERIMENT STATION • GEORGIA TECH



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July, 1977

Presentation on LANDSAT for Gov. Busbee

EES Electromagnetics Laboratory had some important visitors June 30 when Governor George Busbee, Frank Press (Science Advisor to President Carter), Richard C. Atkinson (Acting Director of the National Science Foundation) as well as Omi Walden (Director of the State Energy Office) met with **Nick Faust**, EES LANDSAT project director, in the Baker Building.

The purpose of the meeting was to brief members of President Carter's Science Advisory Committee on LANDSAT, which involves taking satellite data and making land cover maps of Georgia from it. Faust spoke to the group on the features of LANDSAT, and Bruce Rado from the Department of Natural Resources gave a history of a transfer of technology agreement the State has with NASA in which Georgia Tech acted as coordinator of the computer aspect.

The LANDSAT grant is with the Department of Natural Resources and other federal, State and local agencies. The State is using the information for making land use maps and also for satisfying Environmental Protection Agency requirements to monitor non-point source pollution. LANDSAT data, according to Faust, is only one component of a natural resources geographic data base and will be overlaid with, e.g., soil data and population data to theorize environmental and economic effects of development and long range planning in the State.



Nick Faust briefs visitors on LANDSAT project. L. to R.: Dr. Don Grace, EES; Gordon Harrison, State Office of Planning and Budget; Dr. Frank Press, Science Advisor to President Carter; Gov. Busbee, and Dr. Richard Atkinson, Acting Director of NSF.

FY74	10.2m
FY75	13.3m
FY76	17.8m
FY77	25.0m (estimated)

Rapid growth of sponsored research has created some negative reaction on the campus mostly from undergraduate students and non-resident faculty. However, research contributions to the improvement of instruction have been tremendous. Georgia Tech has reached new high levels of local, state, national and international recognition because of the extensive, high-quality research programs. Research leadership in several areas has attracted much of the increased research funding. By comparison with leading national research universities, Georgia Tech research funding should be in the range of \$50m-\$100m per year to move into a top-ranking national position.

Research Report

At the June 14 meeting of the GTRI, **Dr. T.E. Stelson** V.P. for Research, reported that research contract and grant income for the eleven months, July 1976 through May 1977 totaled \$23,114,680. This is an increase of \$7,926,199 or 52% over the income of \$15,188,481 in the year earlier period.

Georgia Tech research activity is growing rapidly. Grant and contract income for the last five years is as follows:

FY73	\$9.7m
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New Duties for Jerry Lewis



Jerry Lewis

Effective July 1, **Jerry Lewis** assumed the internal title of Senior Associate in the EES and will be attached for administrative purposes to the Office of International Programs. He will work on regular and special assignments with the OIP and on special assignments with the T&D Lab, the Office of the EES Director, and other units as special needs arise.

IDD News

Ed Bethea was a panelist discussing "Regional Growth and Markets" at the State of the Black Economy Symposium held in Atlanta on June 9, 1977.

Bob Cassell attended a seminar held in Atlanta, May 29-31, by the Urban Land Institute.

Emanuel Minter and **Priscilla Parris**, who are students in the Governor's Intern Program, began work at IDD-TDL on June 20 and will remain until August 26. The two are graduate students at Atlanta Univ. Other students working in IDD: **Pat Cooper**, student at Univ. of Georgia and **Brenda Inglese** of Chicago. She will be entering the University of Illinois in the fall.

Jacqueline Lopez is a new Secretary I working for IDD.

Bob Cassell attended a seminar held in Atlanta, May 29-31, by the Urban Land Institute.

ASL News

Three additions have recently been made to the staff of ASL's Energy and Environmental Analysis Division: **Dr. Ibrahim El-Barbary**, **Dr. Jack Ralls** and **Dr. Laurence Strattan**. All three are working with **Steve Havlicek** on his EPA contracts.

Dr. El-Barbary comes from the Environmental Health Administration in Washington, D.C. He holds a Ph.D. degree from SUMY-Binghamton where he developed trace and ultratrace analytical methods for toxic metals in environmental samples from the upper Susquehanna River ecosystem. Prior to his emigration from his native Egypt, he served as Director of the Chemistry Department Laboratories in the Ministry of Industry.

Dr. Jack Ralls joins the EES staff from the National Canner's Association where he had spent nearly twenty years administering research activities at their Western Research Laboratories. He received his doctorate in organic chemistry from Northwestern University in 1949 and did postdoctoral work at the University of Wisconsin.

Dr. Laurence Strattan joins us from Emory University where he was involved in research in the area of gas phase kinetics utilizing a discharge/flow system with mass spectrometric detection. He earned his Ph.D. degree in physical chemistry at the University of Kansas and did his undergraduate work at Wichita State University.

Effective July 1, the Environmental Chemistry Branch became part of the Energy and Environmental Analysis Division (EEAD), ASL and as such is no longer identified as an independent operating unit of the Laboratory. It will continue to function within EEAD as the Environmental Chemistry Programs Office under the administrative responsibility of **Dr. Jack Spurlock**.

Dr. Minick Rushton, University of Massachusetts, is spending the summer with **T.P. Lang's** Neutrino Group as an unpaid Visiting Associate Professor in order to be a part of the exciting work in fundamental aspects of neutrino physics.

The Neutrino Group has now finished moving 80 tons of neutrino detection equipment and shielding from "the well" in Room 20 to Room 28 (Baker), where it has further grown in size and is now in check-out operation.

R.A. Young, **P.E. Mackie**, **K. Sudarsanan** and **Derrold Holcomb** attended the American Association of Dental Research meeting 23-26 June 1977 in Las Vegas where they presented papers.

Mexico City was the local of a honeymoon trip for **Teresa** and **Ray Young**. The former **Teresa Chan** and **Young** were married 11 June.

There are new babies at the homes of ASL staff members **James House** and **James Cagle** of the Applied Physics Branch. The Houses had a son on June 12th, and the Cagles have a daughter born on June 21st.

Connie Livesay, Ch.E. major, has joined EEAD as a Student Assistant. **Connie** is the daughter of **Dr. B.R. Livesay** of the Solid State Science Division of ASL.

New EES Distribution Lists

The R&P Department, **B. Yarborough**, has recently published, revised and updated Administrative Distribution Lists; "A," "B," "C" and "D"—which should facilitate communications and information throughout the staff.

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Station to Station

This month's column will continue with our comments on reports submitted by policy planning committees that studied the problem areas suggested by the External Advisory Council that met at EES last fall. The committee on *Management Procedures* was chaired by Doug Robertson, with Sam Alford, Dave Clifton, Howard Dean, Edie Martin, Charlie Smith and Bob Zimmer as members. Bill Ward was Chairman of the committee on *Goals and Plans*, and his committee members were Howard Dean, Hugh Denny, Jerry Eaves, Bob Goodman and Jack Spurlock. Each of these two committee reports is rather long, and only a few of the highlights will be given here. The complete reports are available in my office for those who are interested in more details.

Management Procedures

The External Advisory Council urged that there be a consistent policy for making R&D management decisions and that this policy be known to everyone and used in our daily activities. A further concern of the advisors was that our present informal management system might not be able to survive significant growth.

The Management Procedures Committee report provides an overview of policies and procedures, identifies needed policies and procedures, and recommends areas for further action. Although it was certain that organizational units, relationships and responsibilities will change with time, the committee believed that the basic organization of projects and program area units will continue for the foreseeable future. Because of the fundamental nature of these entities, it was felt that managerial and procedural guidelines for them were particularly important. Consequently, "Project Director Guidelines" and "Division Chief Functions and Responsibilities" (adapted from earlier versions developed by one of our units) were suggested as starting points for further efforts.

The committee also identified seven functional activity areas and defined each in terms of the current and projected operational mode of EES. A host of specific situations, needs and approaches to fulfilling these needs are contained in the report. An example problem from each will illustrate the activity areas.

With respect to *personnel management*, there is a need for internal continuing education to update our staff in their own and related subject areas. *Marketing* is vital to the financial support of the Station, but our representatives who are in touch with prospective sponsors may not know all of the important areas of capability within EES.

The *financial* control and report systems for EES are structured primarily to meet university system and state requirements, and do not facilitate the project mode of operation. Also, there need to be improved and consistent procedures for developing the initial budget for a proposal and "cost to complete" figures for project work remaining at any time.

More efficient use of *materials and facilities* could result from centralized information on (and possible control of) equipment and severable facilities. The perceived needs in *program management (operation)* include a recognition that, in order to accommodate further growth, we must develop additional qualified project directors from those individuals who have this type of ability and interest. There is a need for *station management (corporate)* to establish the market size in which we will compete since organization size itself has a major impact on strategy which in turn has an impact on organization size. There is a need in every organization for *services*, and this includes the use of both centralized and distributed computer facilities. Users need additional information on these resources and their needs should be established before major facility changes are made.

The Management Procedures Committee has recommended establishment of a standing committee to review EES needs for developing new procedures and changing existing ones. Membership would include a cross-section of EES from the Director's Office, service groups, laboratory and project levels, and professional staff who are not project directors.

Goals and Plans

One of the important recommendations of the External Advisory Council was that EES should put direction in its growth and "control its destiny" by setting goals and developing operating plans to achieve them. The Goals and Plans Committee considered the needs and the rationale for more formalized methods of goal-setting and planning as part of the EES operation. The following concepts and guidelines served as a basis for its considerations:

- Goal-setting and planning are management functions and responsibilities
- Both long-term and near-term goals and plans should be developed

- The development process should involve interactive participation of all levels of management
- Approval goals and plans should form the basis for performance and achievement commitments of management and staff
- Approved goals and plans should provide the framework for all operations, including day-to-day decisions
- The planning timetable should accommodate other scheduled events such as the annual budgeting process.

The processes of setting goals and developing operating plans should be conducted with the best perception possible of the total environments that will shape and constrain the EES activity through the planning periods. These environments include the major political, social, economic and technological forces that form the framework in which the EES operation must couple, react and respond.

Specific goals should be defined for one year, with possible extensions into the next. Beyond five years, goals must, of necessity, be only loosely defined and can be expected to be of a more generic, enduring nature ("motherhood").

As a basis for the actual goal-setting and planning processes, it will be necessary initially to develop a set of criteria based, for example, upon the current business profile of EES and anticipated trends in contract opportunities. Goals and plans should encompass all of the areas that characterize EES and its operation. Recommended areas for goals and plans include Growth and Size, Response to Legislative Charter, Types and Areas of Research, Service, Relationship with Academic Community, Standards of Quality, External Image and Management. Twenty potential goals are suggested in broad terms.

In the area of planning, the committee recommends that the Director establish a policy that EES will prepare plans which are designed to achieve approved goals. Specific recommended procedures include the following:

- Director's Office develop a general strategy for planning and review interactively with next higher and lower echelons of management
- Director establish a standing committee to develop the structure and format for plans and to establish elements and guidelines for plan preparation
- Director establish timetable for plans for short-range (1 year), mid-range (2-5 years), and long-range (greater than 5 years)
- Director's Office prepare initial short-range and mid-range plans

and review interactively with next higher and lower echelons of management

- Director's Office issue guidelines to Laboratories for developmental plans
- Director's Office receive Laboratory plans, integrate into EES initial plan and review interactively with Laboratories
- Director approve initial plan and review with President and Vice-President for Research
- Standing committee and Director refine plans and review with Laboratories
- Director resolve conflicts, approve, and publish plans.

The entire planning process should be scheduled to provide for completion at least by the end of the first month (July) of the new fiscal year for which the short-range plans have been formulated.

These are, of course, merely highlights of the committee reports which go into considerably more detail. Several recommendations have already been implemented, and I will continue to use these reports for advice and guidance.

Donald J. Bruce



ETL News

H.W. Denny and **S.L. Robinette** were in Washington, D.C., 13-14 June to discuss potential contracts with representatives of HDL, ERDA, FRA, FAA, and NAVSHIPS.

Ron Wallace attended the organizing committee meeting of the International Symposium on Subscriber Loops and Services—78, which was held in Chicago June 13-16 in conjunction with the International Conference on Communications. Ron is the local arrangements chairman for the symposium, which will be held at Georgia Tech on March 20-24, 1978.

Gayle and **Peter Hudson** have announced the birth of their daughter, **Donna Lynne**, on July 5. Gayle is Doug Robertson's former secretary in ETL.

Research Information

The U.S. Army has announced the move of the Computer Systems Command Technical Development Program from Virginia to a collocation at Georgia Tech. This activity is planned to grow to \$5m annually with 75 people in about three years. Approximately half of the program will be by contract with Georgia Tech.

The 400 KW Solar-Thermal National Test Facility is nearing completion of the campus. This is four times the size of the largest such unit now in operation.

The 15 KW electric wind generator located on the campus is the largest university wind generator ever built.

Plans are moving ahead to interconnect all campus buildings for the exchange of computer and TV information.

RAIL

RAIL is participating in a foreign exchange program whereby one of its students, **Ken Rasche**, is working in Holland this summer and, in exchange, RAIL is happy to have **Ludo Janssen** from Holland who commenced work June 27 in the Experimental Branch.

Jerry Eaves recently hosted a "cookout" at his house for the Radar Technology people. Attempts were made to catch some fish from his lake and songs and music were supplied by **Bob Appling** and **Jim Metcalf** with their guitars.

Because of the large number of employees now being hired by RAIL, **Edie Martin's** Software Development Branch conducted a "New Employee Orientation" program on two mornings. The new employee had the opportunity to become acquainted with EES operations, Lab procedures, etc.

Bill Holm has just managed to drag himself back to work after a two-week vacation—in Paris and on the French Riviera.

Nick Currie, **George Ewell** and other RAIL personnel hosted a Waterborn Intruder Detection System (WIDS) meeting on June 8. As a part of the meeting, **Frank Riherd** and **Tom Hedges** demonstrated a simulation of real time tracking algorithms for WIDS application.

T&D Lab News

The Savannah Area Office of the Indust. Ext. Div. has a new secretary—Mrs. **Eileen Buchner**. Eileen, who filled the position vacated by Betty Summers, assumed her new duties in late May. Her interests include tennis, swimming, jogging, gardening and sewing.

Rich Combes gave a talk entitled "Poultry Industry Energy Conservation in Georgia" at the Engineered Food Systems Energy Seminar in Kansas City, June 3.

Joan Wood, **John Dawkins**, and **Rich Combes** presented papers at the National Conference & Exhibition on Technology for Energy Conservation in Washington, D.C., June 8-10.

Dona Tucker recently joined TDL-Productivity Division as a secretary. Dona's husband is getting a second undergraduate degree at Tech.

J.A. Knight attended the "Air-Energy Conference" at the Urban Life Center, Georgia State University on May 19 and made a presentation on "Waste Utilization," under their program entitled "Air-Energy & Waste Management."

Vacation Policy for General Faculty

The vacation policy for fiscal year employees who are Members of the General Faculty employed on a fiscal year basis earn vacation at the rate of one and three-fourths (1¾) days per month or twenty-one (21) working days per year.

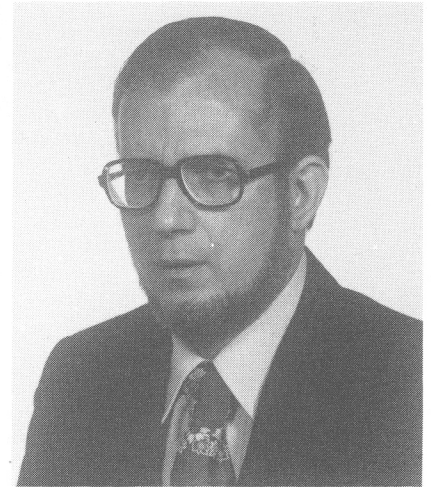
Earned vacation time may be accrued up to forty-five (45) working days, and on June 30 individual vacation records are adjusted to show no more than forty-five (45) days of accrued vacation. Upon termination, employees are compensated for accrued vacation to a maximum of forty-five (45) working days.



Ross Hammond, heads IPO



Nelson Wall, Associate Director



Don Lodge, Chief of Operations

New Office of International Programs

The international development function of EES has been spun off from the former Economic Development Laboratory and has achieved independent status as the Office of International Programs (IPO), reporting directly to the EES Director and taking on the added responsibility of coordinating all of the Station's international activities.

Designation of the Office followed a year of unprecedented growth in international programs. During fiscal 1977, 19 sponsored international development projects were active, representing total personal services of almost \$220,000 and total sponsored research expenditures of

approximately \$475,000. This total research volume was more than 350% greater than fiscal 1973, the year in which international development activities at Georgia Tech were launched on a major scale through a five-year grant from the Department of State's Agency for International Development (AID).

The new office is headed by **Ross W. Hammond**, formerly Director of the EDL. **Nelson C. Wall** is Associate Director of IPO, and **Donald E. Lodge** is Chief of Operations.

IPO staff members have been involved in international development since 1964. Current programs focus primarily on stimulation of small-scale industries

in developing countries throughout the world, with special emphasis on rural and urban development, appropriate technology, alternate energy sources, technology transfer and training.

Providing information support to international activities is IPO's International Development Data Center (IDDC). Currently, the collection contains nearly 4,000 pamphlets and books, 100 directories, and 250 serial titles. The IDDC staff maintains linkages with outside information sources, compiles bibliographies and directories, and publishes a monthly current awareness bulletin.

GA. TECH at ASEE Conference

Tech was well represented at the 85th Annual Conference of the American Society for Engineer Education held at the University of North Dakota, 27-30 June.

Dr. A.P. Sheppard, Associate VP for Research, served as a moderator for some of the sessions; **E.E. Renfro** of OCA gave a talk on "Negotiation and Contracting on an International Scale"; and **Lee Burks**, of T&DL, made a presentation about women in engineering: "Before and After; Expectations and Reality for Men and Women Freshmen Engineering Students."

Director Grace Off to Europe

Don Grace, accompanied by his family, is on a combined business and vacation trip to Europe during July until the middle of August.

His plans include touring France and such interesting places as Coutances, Tours, Paris, Odiello (and the Solar Furnace), Aix en Provence and Nice.

They will then go to Milan and Amalfi, Italy. The last eight days of July will be spent in Interlaken, Switzerland, and Vienna, Austria.

Then in August he will be in Munich, West Germany; Brussels, Belgium; and London, England. The Graces are scheduled to return to Boston on August 12.

Nuclear Research Center

On June 17th, **Dr. Monte Davis**, director, NRC, delivered a speech to the annual convention of the National Broadcast Editorial Association at the Peachtree Plaza Hotel.

Mr. Elmo Ellis, general manager of WSB Radio and vice-president of the NBEA, invited Dr. Davis to be a panel speaker during the sessions devoted to an in-depth discussion of "The Future" relating to energy and people.

Dr. Davis shared the program with Dr. David Matthews, President of the University of Alabama and former Secretary of HEW and Mr. Dean Rusk.

