Station News

Georgia Tech Engineering Experiment Station

VOLUME 12 NUMBER 10 JUNE 1982

External Advisors Praise EES

Members of the External Advisory Board gave EES a good report card and a lot of advice during a two-day meeting here in late May.

Dr. **Charles M. Johnson,** manager of the Advanced Studies & Analysis Division of IBM, said he was impressed and astounded with the number of contracts in the electronics labs. He suggested that there be fewer proposals, but larger contracts. He felt the productivity was good on the electronics side.

William R. Rambo, former director of Stanford Electronics Laboratories, commented: "Tech is broadly appreciated and sometimes hated by competitors, especially in areas like millimeter waves where Tech is a leader." He said EES should concentrate on its strengths, which he said include: 1) availability of the academic faculty, 2) instrumentation, and 3) demonstrated capabilities.

All the advisors stressed increasing the interaction with academic researchers. And they felt the academic side could benefit from the broad management skills available in EES.

William Leithauser, general manager of the Range Manufacturing Department of General Electric, said there seems to be a duplication of work and equipment. For example, he noted that a lot of millimeter work is being done in various laboratories, and each lab has its own computers. EES Director **Don Grace** pointed out that Associate Director **Jim Wiltse** is heading a committee to look at use of computers in EES from an overall standpoint.

Leithauser suggested that when an engineer is laid off in one lab for lack of work, he might be retrained at minimal expense for work where it is needed in other labs. This might be preferable, he said, to hiring a new engineer. He also suggested recruiting among depressed industries where layoffs are occurring.

George Dieter, dean of the College of Engineering at the University of Maryland, said he found good morale in the resources labs, and he was impressed with creative things going on in EMSL. He was pleased to see EES examining growth possibilities in manufacturing technology and materials handling, but suggested the pace might be accelerated. Dieter said no other engineering university has a research organization like EES.

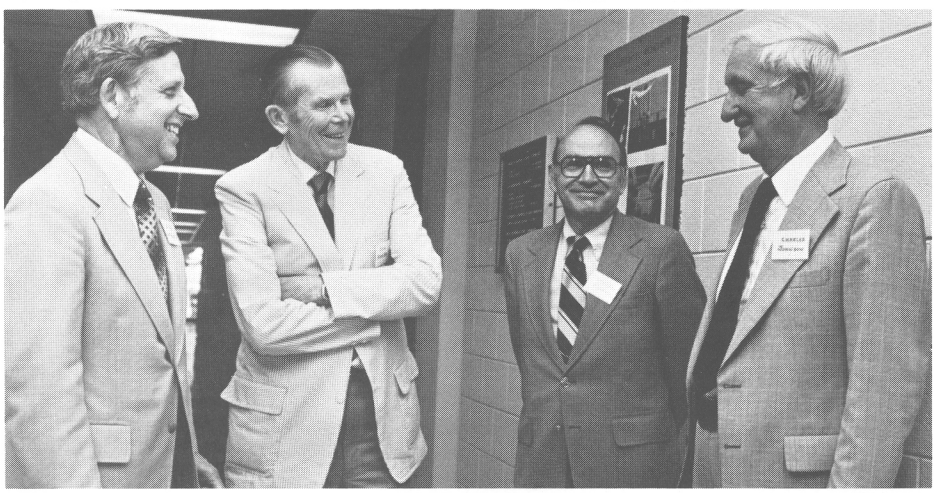
William Leithauser and John McKelvey (right) look over EES briefing material.

John C. McKelvey, president of Midwest Research Institute, said the largest single area of growth for his firm is in the overseas market. MRI furnishes a manager and builds costs into a two-year contract, with more money for people to go to less desirable places. Work ranges from market research all the way to setting up labs.

Dr. Grace expressed concern about state-imposed ceilings on salary raises and a 15% turnover rate. Rambo said that many California companies were seeing a 35% turnover. One Advisory Board member noted that the economy is tight everywhere; he knows of a research laboratory operation somewhat similar to EES where raises this year average 6¼%, with a maximum of 7¼%.

Rambo ended his remarks on a light note. He said he read in an EES brochure about security radar for the MX missile that is so accurate it can spot jackrabbits. With such expert target discrimination capabilities, he calculates we ought to have about 1,000 alarms a minute!

For Advisory Board members who missed this session, another meeting will be held on October 19-20.



Left to right: **EES advisors William Leithauser, William Rambo, George Dieter, and Charles Johnson relax a moment during the External Advisory Board meeting. (Photos by Pat Stone)**

EES To Assess New Landsat

EES will help the National Aeronautics and Space Administration (NASA) evaluate its brand-new "Landsat D" earth resources satellite. **Nick Faust** of the Electromagnetics Lab (EML) is co-principal investigator on the two-year project with Dr. **Roy Welch** of the Department of Geography at the University of Georgia.

"We'll evaluate the new data over Georgia areas where we have existing data, to determine which set is better and how much better," said Faust. "Tech will be responsible for all the image processing data analysis."

Landsat D, the fourth in the United States series of earth-scanning satellites, will be launched this fall. NASA is enlisting the help of 10 to 15 universities to evaluate its performance in comparison with the older satellites.

"After evaluation is completed, NASA will get out of the operational earth satellite business," Faust said. "It will turn them over to the National Oceanic and Atmospheric Administration, which already operates weather satellites."

How will Landsat D differ from Landsats 1, 2 and 3? According to an article in the March/April 1982 issue of *High Technology*, it will have an advanced multispectral scanner that will acquire simultaneous images of the earth's surface at seven regions of the electromagnetic spectrum, rather than the four now covered. Landsat currently is aimed primarily at agricultural applications, but the "D" satellite will substitute a band of interest to geologists.

The new scanner or "thematic mapper" also will produce higher resolution images that can focus on areas as small as a baseball diamond.

Another innovation will be the use of data relay satellites to radio images to the ground. Current Landsats record and store images on tape when out of range of tracking stations on earth. The U.S. plans to launch its first tracking and data relay satellite in early 1983.

The United States, which pioneered earth satellite technology, continues to be the principal supplier of satellite data to the world. Many underdeveloped nations use Landsat to inventory their natural resources, and Georgia Tech gets involved in that aspect, too. Faust will go to the People's Republic of China for a month this summer, under United Nations auspices, to train Chinese scientists to use a computer to analyze Landsat data.

EES Testifies On Energy Needs

Bob Cassanova, EMSL, and **Bill Bulpitt,** TAL, testified at a field hearing of the U.S. House Subcommittee on Energy Development and Applications on May 28. Cassanova spoke on solar thermal R&D needs, and Bulpitt on biomass. The hearing was held in the U.S. pavilion at the Knoxville World's Fair.

"The Subcommittee is engaged in a study to determine the needs for federally sponsored research, development and demonstration in renewable energy technologies over the next decade," Cassanova explained. "The Reagan administration plans to terminate federal funding for renewables in FY 1984, but the Subcommittee supports renewables research. In fact, the chairman of the parent House Committee on Science and Technology, Rep. Don Fuqua of Florida, is a strong supporter of renewables.

"The Subcomittee is soliciting expert testimony to provide the rationale for continued federal funding," Cassanova added. "I will be working with their staff over the next several months, helping them draw up recommendations in the solar thermal field. They hope to have the first draft of the Subcommittee recommendations by September.

"I am more optimistic about the fate of renewables research spending by the federal government than I have been for a long time. It is becoming stabilized at lower levels. Although the demonstration and commercialization projects are winding down, I believe they will fund R&D. Solar thermal and other renewable energy forms are versatile in application, are environmentally benign, and deserve adequate funding for technology development and research just as other energy technologies are receiving."

Mahaffey And Ste

ECONOMIC DEVELOPMENT LAB

Jim Muller was elected chairman of the 300-member Atlanta Chapter of the Society of Manufacturing Engineers for 1983-84 and attended Chapter Day at the national headquarters in Detroit on June 24-25. He also has been named Georgia Tech's representative to Computer Aided Manufacturing — International (CAM-I), a nonprofit research organization composed principally of industrial members. Muller attended a meeting in Los Angeles on June 9-11 to decide on projects to be funded under CAM-I's new Electronics Automation Program.

Joan Meeks has been appointed secretary of the Georgia Tech Women's Forum by its executive board.

Safety & Health Services: **Marilyn Black** was chromatography session chairman at the 4th Annual National Chromatography Symposium in Atlanta during May and presented a paper, "The Determination of Pentachloraphenol in Air by Gas Chromatography/Electron Capture Detection." **Jim Burson** and **William Spain** directed a Georgia Tech short course entitled "Supervision of Asbestos Abatement Contracts" on May 25-27. Lecturers included Burson, Spain, **Bill Ewing,** and several external speakers. The course drew its limit of 50 people, and will be repeated on July 20-22.

Jim Mercer was a panelist for a discussion of "Cutback Strategies, Technology Transfer and Productivity Improvement" at the 24th Annual Conference and Equipment Show conducted by the Virginia-D.C.-Maryland Chapter of the American Public Works Association in May at Williamsburg, Virginia. He will conduct a three-day goal-setting retreat for Atlanta city administrators at Lake Lanier in July at the request of Mayor Andrew Young. This is an outgrowth of Mercer's years on an Atlanta Chamber of Commerce steering committee that oversees a program that lends corporate executives at no cost to the city for consulting work.

Judi Komaki conducted a week-long Organizational Behavior Management Seminar at Drake University June 1-4.

ELECTRONICS & COMPUTER SYSTEMS LAB

At the 28th Annual Meeting of the American Nuclear Society in Los Angeles on June 7-9, **Jim Mahaffey** presented an invited paper on "Mil-Spec Computers for Use in Nuclear Power Applications" that won the best-paper award and a check for $250. He also chaired a session on "DASS and Computer Aids for Operations-II."

Jim Toler attended the IEEE Electromagnetic Compatibility Society Board of Directors meeting in Houston, Texas, June 10 as chairman of the Membership Development Committee and Awards and Fellows Committee.

Ron Seaman presented papers entitled "Microelectrode Voltage Noise During Microwave Irradiation" and "Membrane Noise as a

nway Win Awards

P[illegible] of Microwave Effects on Cardiac Cells'' at [illegible] June 28 annual meeting of the Bioelectromagnetics Society in Los Angeles. He gave a paper on ''Changes in Cardiac-Cell Membrane Noise During Microwave Exposure'' at the IEEE International Microwave Symposium in Dallas, Texas, June 16-18.

ENERGY & MATERIALS SCIENCES LAB

Joe Harris, general chairman, and **J. D. Walton,** technical program chairman, report that the 16th Symposium on Electromagnetic Windows, held at Georgia Tech on June 9-11, was a great success. The 125 attendees included 19 from France, Israel, Italy, Sweden and the U.K., and some 39 papers were presented. Other EES people on the steering committee were **Harold Bassett** (RAIL), **Dennis Kozakoff** (EML), **Jim Fuller** (ECSL), and **Joe Newton** (EML).

At the Department of Energy's 14th Annual Biomass Thermal Chemical Conversion Meeting in Arlington, Virginia, on June 22-24, **Jim Knight** made a presentation on the current status of the EMSL project on ''Entrained Flow Pyrolysis of Biomass.'' Also attending the meeting were **Charlie Gorton** and **Zenon Redkevitch.**

OFFICE OF THE DIRECTOR

Jim Wiltse was a session chairman and invited panel speaker at the IEEE International Microwave Symposium on June 15-17 in Dalla[illegible]xas. He attended the 28th Annual Tri-Service Radar Symposium at Wright-Patterson Air Force Base, Ohio, on June 22-24.

RADAR & INSTRUMENTATION LAB

Bill Steinway received a certificate of recognition and a cash award of $100 in May from the Technology Utilization Center of NASA. The award was for the creative development of technology in the area of high-resolution soil layer depth measurement; the technology also is the subject of a NASA Tech Brief.

At the Antennas and Propagation Society Symposium recently held at the University of New Mexico, **Gene Martin** presented a paper entitled ''Radar Reflectivity of Dust Cloud from Misers Bluff II Test.''

Gene Knott has been invited to give a paper on radar camouflage in July at a research and development conference in California sponsored jointly by the Technology Transfer Society and the Los Angeles Council of Engineers and Scientists.

SYSTEMS ENGINEERING LAB

Lloyd Lilly is the new president of the Peachtree Roost, Association of Old Crows. He was installed May 18 for a two-year term, succeeding **Archie Corriher. Bob Zimmer** was a founder and first president of the 127-member group.

TECHNOLOGY APPLICATIONS LAB

[illegible] McGowan presented a paper on ''Textil[illegible]rying Via Wood Gasification'' at the Forest Products Research Society meeting in New Orleans on June 22.

Birchfield Named ATDC Director

Jerry Birchfield has been appointed director of the Advanced Technology Development Center (ATDC), effective June 1. He has been ATDC's acting director since its inception in December 1980.

Birchfield, who has directed the Technology Applications Lab (TAL) since 1979, brings to his new post a broad background in high technology R&D in the fields of energy conservation, alternative energy, industrial productivity, radio frequency alarm systems, signal processing equipment, and electromagnetic compatibility, as well as considerable management experience. He is the author of three patents.

Birchfield began working at EES in 1965 as a graduate research assistant while pursuing a master's degree in electrical engineering at Georgia Tech. He was associate director of the Technology and Development Lab from 1976 to 1979. He has held the title of principal research engineer since 1979.

Rudy Yobs is acting director of TAL until a new permanent director is located.

Virginia Keller (right), president of the Georgia Tech Women's Forum, chats with TV news personality Monica Kaufman, who was the Forum's May luncheon speaker.

EES Short Courses

On August 3-5, RAIL will offer its popular Continuing Education course on *Techniques of Radar Reflectivity Measurement.* **Nick Currie** again is the academic administrator. Coming up November 15-19 is the perennial best seller, *Principles of Modern Radar.*

EES personnel will be on the faculty of the *Modeling, Simulation and Gaming of Warfare* course on August 24-27. Participants will be **John Gibbons** (SEL), **Gerald Carey** (OOD), and **Ross Gagliano** (RAIL).

Borden Goes To ERII

Andrew G. Borden, Jr., has been appointed manager of technical operations of the European Research Institute of Ireland (ERII), effective June 1. His principal function will be to develop contracts with Irish and other European clients over a broad spectrum of technical fields, with particular emphasis on the electronics industry.

Borden joined EES last October to manage the SEL field office at Eglin Air Force Base. A retired Air Force colonel, he is skilled in electronics systems design and analysis, including operational test and evaluation of electronic equipment. His educational background includes a bachelor's degree in psychology, two master's degrees in mathematics, and computer studies in automata theory and artificial intelligence.

ERII, established last year in Limerick, Ireland, is a nonprofit research organization sponsored jointly by several agencies of the Irish government, as well as Irish and foreign industries. **Dan O'Neil** is ERII's chief executive officer.

EES Retirees Feted

J. Elmer Rhodes, Jr., Charles E. Smith, and **Phinizy N. Scarboro** were the honorees at the second EES Retirement Reception. The affair, honoring employees retiring between February 1 and June 30, was held June 17 in the Alumni/Faculty House ballroom.

Elmer Rhodes, principal research scientist in the Systems & Techniques Lab, came to Tech in 1946 to teach physics, after receiving his doctorate from Johns Hopkins University. He moved to EES in 1953 and headed the Physics Branch in 1956-1958. He also taught mechanical engineering for several years in the 1960s.

Elmer describes his field of specialization as the "behavior of the universe." His technical interests are indeed about that broad, covering the gamut of classical physics from electromagnetism, optics and acoustics to fluid dynamics and statics. As a longtime colleague puts it, "While Elmer's ability to solve abstract scientific problems is legendary, his learning also extends to such practical matters as how to build a house (he built his), shoe a horse, fly a plane, and tune up a car engine. But perhaps he will be remembered longest around Tech for his dry wit."

Retiree Charles Smith and his wife Rhoda enjoy the ceremonies at the Retirement Reception.

Charles Smith ("Smitty") is leaving the managership of the Research Property Management Department after a 31½-year career at EES. Soon after his arrival, his outstanding skills in the areas of procurement, property administration and control, and financial management placed him in great demand among EES research units, and by 1975 he was in the research property control business officially for the entire Station. He took over this job for all of Georgia Tech in 1979. In addition to inventorying and managing all property acquired for or furnished by research project sponsors, Smitty produced the famous "stair-step" charts, a monthly pictorial record of current personal services backlog and proposal activity for EES major units.

Don Grace extends EES' best wishes to Phinizy Scarboro, who displays a plaque commemorating his service to Georgia Tech.

"Phin" Scarboro joined Tech's machine shop staff in 1966 as a machinist, and became assistant manager of the Mechanical Services Department in November 1977. He transferred to the Electromagnetics Lab as an instrument maker in November 1981. His friends remember him as a hard worker and a good supervisor, and wish him "good fishing."

The trio are among ten EES staff members who have retired since June 1981. All ten were honored at Tech's Retirement and Awards Dinner on May 25, along with five employees who have completed 25 years of service to the Institute. Receiving Gold-T pins were: **Elizabeth N. Bone** (STL), **Frederick B. Dyer** (SEL), **Lewis W. Elston** (EMSL), **James C. Meaders** (STL), and **Edwin J. Scheibner** (STL).

SEL Division Reorganizes

ECONOMIC DEVELOPMENT LAB

Steve Wilenchek is leaving June 28 to become operations and administrative manager of Northern Telecom Finance Corp. in Nashville, Tennessee.

ELECTRONICS & COMPUTER SYSTEMS LAB

Jeanne Hanks Balsam is joining the Computer Technology & Applications Division as a research scientist II. She is returning to EES after living in Boston.

ENERGY & MATERIALS SCIENCES LAB

Chuck Ray has resigned to work for Sherwin-Williams.

RADAR & INSTRUMENTATION LAB

EES extends its sympathy to **Gene Martin,** whose wife, Jane, recently died after several years of ill health. The staff also shares in the sorrow of **Jim Ussailis,** whose wife, **Carolyn** — a RAIL secretary — died after a long illness.

SERVICE GROUPS

Facilities Management: Congratulations to **Brenda King,** who has been promoted to senior secretary. **Richard Turner** is a new mail clerk.

Mechanical Services: Congrats to **Martin Harmon,** who has been promoted to stores clerk II.

Personnel Services: Welcome to **Beadie Lloyd,** personnel assistant I.

Supply Services: Welcome also to **Jerome Linder,** stores clerk I.

SYSTEMS & TECHNIQUES LAB

Belated congratulations to **Suzanne South** and **Robert M. Goodman, IV,** who were married on April 17.

SYSTEMS ENGINEERING LAB

Concepts Analysis Division: Welcome to secretary **Judith Ann Cooper. Connie Green** has transferred to the Countermeasures Development Division.

Defense Systems Division: Former GRA **Robert E. Crisler** is now a research engineer I. **Deborah Larkin** and **John Vogt** have resigned.

Electronic Support Measures Division: New employees on the research engineer I level are **Scott Petty, Ken Trussell,** and **Michael Willis.**

The Countermeasures Development Division has been reorganized to accommodate recent and anticipated growth. It now consists of three primary units: Flight Operations Group, **Harland Armitage,** head; Test & Evaluation Branch, **Anthony J. Chimera** (division chief), acting branch head; Advanced Development Branch, **Charles J. Krebs,** head. In addition, **Robert J. Wohlers** has been appointed to the division's technical staff and **Deborah Keais** joins the division as administrative secretary.

TECHNOLOGY APPLICATIONS LAB

Lewis Montgomery and **Patricia Reonas** have resigned.

Station News

Vol. 12 No. 10 **June 1982**

Published monthly for employees of the Engineering Experiment Station, Georgia Institute of Technology, Atlanta, Georgia.

Editor
Martha Ann Stegar 3405
Graphics
Gerald K. Webb 3405