

STATION NEWS

ENGINEERING EXPERIMENT STATION • GEORGIA TECH



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APRIL, 1975

Tech Reps Tour Middle East

It probably wasn't a tour guide's dream vacation, but Vice President/Research **Tom Stelson**, Associate VP **Al Sheppard** and Assistant Professor **Atif Debs** toured five Middle East countries March 7-21 seeking research contracts. The trio visited Algeria, Libya, Iran, Lebanon and Kuwait. In an interview, Dr. Sheppard said most Arab countries currently are seeking to bring their level of technology up-to-date as rapidly as possible and welcome such research entrepreneur groups. In fact, he said, it was crowded with so many groups from Europe, the United States and Japan visiting and trying to get some of the excess Arab money. As an example of the Arab interest in technology, Algeria is building three technical universities at the same time at a cost of \$120 million each. Dr. Sheppard said it was as if one were watching the Tech campus being built at once.

Dr. Sheppard commented that they had been contacted by some Arab groups asking about our capabilities; from others, they solicited sponsored research programs. Most organizations are eager to start exchange programs in research and to send students to Europe or the United States for school. He said most of the professional people they met were educated outside their native country; about half in the US and half in Europe. In every group they met with, at least one person had heard of Georgia Tech and several Tech alumni were encountered. In fact, a graduate student who had done his thesis under Dr. Sheppard met them



The Lebanese Ambassador to Algeria hosts a dinner for Drs. Stelson and Sheppard.

in Iran.

Dr. Sheppard said most of the Middle East countries need help in solar energy applications. The heat problem is particularly acute in Kuwait, and they are interested in air conditioning powered by solar energy. The Algerian hosts asked about our expertise in moving solar furnaces because they have one they want to move into the Sahara Desert. The countries also need help in developing industries which are highly automated and highly productive since they do not have excessive manpower for labor-intensive industries. They are also keenly interested in solid waste disposal systems.

Dr. Sheppard said about nine proposals are already being sent out, and he feels they have a good chance of resulting in firm contracts. There are also several more proposals being developed. He said possibly millions of dollars would be in-

involved over a considerable length of time.

Concerning the more "touristy" aspects, Dr. Sheppard said that in Kuwait, all government officials and most of the rest of the population wear the traditional dress and that men and women are not permitted by Islamic law to attend university classes together. Because of the different Islamic sabbath and the time changes traveling from country to country, the trio ended up working without a break the entire two weeks. He said they were checked and double checked to make sure they were not Jewish. However, seldom did politics arise in their conversations with the professional people they dealt with. He said they did see a Palestinian refugee camp and that the squalor, filth and poverty were horrible.

He commented that such a sight gave them a little better idea of the reasons for the deep level of animosity. Because of the strict adherence to Islamic law, Libya is completely "dry," so Friday afternoons the airports are jammed with people flying to Malta for a week-end of drinking.

New Computer System Operational Soon

A year ago, the Computer Advisory Board established the Benchmark Evaluation Committee to measure and evaluate the relative performance of various computing systems seeking to replace the present system. **Roger Wetherington** of Communications was a member. As a result of the tests, Control Data Corporation's CYBER 74 will replace the existing Univac system. It is due to be up and operating in early April.

The change from one system to another requires great coordination and reworking of programs. According to Rand Childs of the Office of Computing Services, a translator should be operational in mid-April to convert Univac FORTRAN into CYBER FORTRAN. Other programs will have to be converted manually, starting May 1. Several training sessions have been held dealing with the new equipment. **Susan Wheeler** and **John Vogt** from S&TD represented EES.

Rand said it is very important for people to realize that the Univac will not be here after September 30. All programs must be converted by then; otherwise, they will be lost. He said OCS personnel are available for conversion work, but the first contact should be with Susan or John.

The hardware of the CYBER 74 includes two central processing units, one with multiple functional units and the other with unified arithmetic unit. Together, the CPUs issue 3.7 million instructions per second. This is three to five times faster than the Univac system. There are also numerous other new pieces of equipment at both the Computer Center and at remote locations.

Steve Bomar, HTMD, spoke to the Buckhead Kiwanis Club Feb. 17 on solar energy and the status of solar energy research at EES. About 60 business and professional people attended.

Welcome to **Mary Ann Mayo**—New Secretary to Jack Spurlock, Applied Sciences Department.

2nd Annual EES Softball Team

EES is sponsoring a team in the Atlanta Slow Pitch softball league again this year. Last year the team finished a respectable third in an eight team league. This competition provided a good opportunity for employees who would normally only have contact in a scientific environment to gather together on a social basis. The season begins the last of April and games will be played evenings (games starting at 7:00, 8:15, or 9:30) and an average of one game per week will be played.

The team received great support last year from the S&T Dept, and hopes to get more support from all departments this year. Practice has begun and anyone interested in participating should contact **David Wilkins** at ext. 3592 or **Neal Alexander** at ext. 3591.

Ecker Guest Speaker

Dr. H. A. Ecker, Chief of the Radar Division of the S&T Dept. is serving as an IEEE National Lecturer for the Committee on Man and Radiation. He served as guest speaker at a meeting of the University of Tennessee Medical School and the IEEE Memphis Section on February 18 in Memphis, Tennessee. The title of Dr. Ecker's presentation was "Radiation Hazards and Biological & Medical Applications of Microwave Radiation." The meeting was sponsored by The Institute of Electrical and Electronics Engineers, Inc. and the Committee on Man and Radiation.

On February 19, Dr. Ecker spoke to the IEEE Nashville Section and the IEEE Biomedical Group. The presentation was entitled "Radiation Hazards and Biological and Medical Applications of Microwave Radiation." The meeting was held at Vanderbilt University and was sponsored by The Institute of Electrical and Electronics Engineers, Inc. and the Committee on Man and Radiation.

To Whom It May Concern:
Mary Lupton says thanks to the anonymous donor who left on her desk a piece of ivy and four African violet leaves!

International Playboy

Dick Johnson of S&TD spent his biannual Scottish vacation in Edinburgh, Scotland from 12 thru 22 March. While there, he visited McKittrick-Agnew Co., LTD, E. Lothian, Scotland, a subsidiary of Scientific-Atlanta where he was impressed with the enthusiasm and overall qualifications of the company.

On his return trip, he stopped in London to visit Queen Mary College to talk to them about compact ranges, microwave antennas, and several activities which parallel the interest of S&TD.

One of the highlights of his trip was "pub hopping" in the Marble Arch area of London on Friday evening, 21 March, while EES employees were still working (due to the five-hour time difference). He said that he was thinking about good old EES and the Atlanta traffic rush which was about to begin while he sampled English beer.

The flight to and from London was chartered, and he said that it was very enjoyable. He would recommend a Scottish vacation to everyone at EES.

No Fooling

The heads of Southeastern region Federal agencies who form the Federal Regional Council received a briefing on EES energy-related projects Tuesday, April 1st. **Howard Dean, Jerry Birchfield** and **Bob Collier** met with the Council to discuss our programs with special emphasis on the EDA Project A 1644.

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New Projects

Coastal Plain APDC to IDD (**S. L. Dudley**) for feasibility study for an industrial resources and services facility in Tifton — Coastal Plains Regional Commission to IDD (**T. I. Chiang**) for pulp and paper-mill feasibility study — Montclair Industries to PSD (**J. Lupton**) to determine leaks in dow therm heaters — NASA to CD (**H. H. Jenkins**) for research instrumentation for tornado electromagnetic emissions detection — National Science Foundation to NBSD (**R. M. Mason**) for a study of power system options for the Southeast.

"Publish or Perish"?

The professional staff of EES represents a wealth of experience and research accomplishment that should provide a varied source of potential articles for scientific and trade publications. It is considered desirable that qualified individuals write for the professional journals for the dissemination of knowledge, the enhancement of EES' reputation and, last but not least, the professional stature of the individual author — there is also frequently some remuneration involved with publishing.

EES staff members are encouraged to write for publication. The EES Publications Services office is available to assist authors with the organization, editing, illustration and placement of articles with professional journals and trade magazines. Call Jim Donovan, 3405, for additional information.

Missile Group Visits

The Technology Applications Program Group from the Ballistic Missile Defense Project Office visited the Georgia Tech campus March 19 seeking new ideas applicable to the country's missile defense program. Dr. Allen Ecker, Chief of the Radar Division coordinated the visit. The group was touring a few selected centers of technical expertise and research to find out the latest advanced technology available that they might find useful for missile defense applications.



EES staff abounded at the March 10-11 international development conference hosted by IDD. L to R: Ben James, Gaston Parets, Tze Chiang, Bonnee Wettlaufer, Sallie Daniell and Frank Kingsland.

Professional Development Program

The ability of a research center to grow and prosper hinges on the competence of the professional staff. Maintenance of this competence at a high level is always a matter of concern. Fortunately EES employees have opportunities for professional development through attending classes, presenting papers at conferences and participating in professional society activities. However, we lack policies and procedures that systematically stimulate professional development on an EES-wide basis.

In order to more actively encourage professional development, an EES Professional Development Committee has been formed to seek information on current practices in the field, and to recommend policies and procedures. The committee members are: **W. C. Howard**, Chairman, **D. L. Allen**, **M. E. Anders**, **N. W. Cox**, **J. C. Toler**, **B. C. Yarborough**.

S&T News

Patrick H. Ryan, is a new employee in the Systems Methodology Branch-Assistant Research Engineer.

C. E. Summers, who has worked as a co-op in SSD since December 1972 will join as a full time Assistant Research Engineer, Systems Technology Branch, upon graduation in June.

E. K. Reedy is project director for A-1713, "Lightweight Scanning Antenna Investigation for a Mortar Locating Radar."

INTERNATIONAL CONFERENCE

Big Success

Over 100 persons from 19 states in the U.S. and 15 foreign countries attended the two-day Conference on Techniques and Methodologies for Stimulating Small-Scale Labor-Intensive Industries in Developing Countries last month, hosted by IDD with the support of the U.S. Agency for International Development (AID). It was followed by a three-day seminar with about 20 invited participants, including representatives of the AID 211(d) grant program counterpart institutions and selected resource people from other development organizations.

Keynote speaker for the conference was Curtis Farrar, a top official with AID. Dean Rusk delivered the banquet address. Other speakers represented a cross section of outstanding government and private organizations worldwide.

Old Crows Hear Zimmer

Bob Zimmer was guest speaker at the Huntsville Chapter of the Association of Old Crows on February 24 in Huntsville, Alabama. The title of Zimmer's presentation was "Expendable Countermeasures for Tactical Air Force Scenario."

P. E. Mackie, PSD, gave a report at the ACA meeting Mar. 9-13 in Charlottesville, Va. . . **A. H. Becker** and **M. C. Hedin**, Photo Lab, attended the Printing Industry Show in Charlotte Mar. 14-15. . .

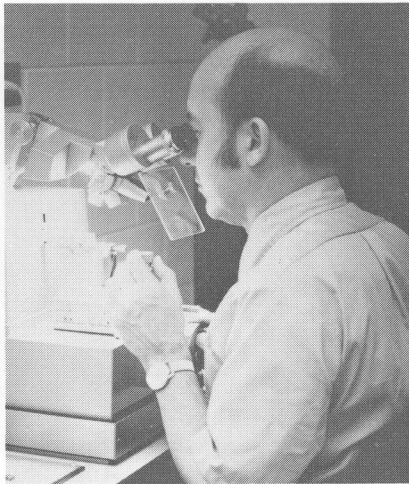
PERSONALITY

His is a Small World

Ordinary objects seen through the electron microscope have an entirely different appearance. And **John Brown**, Head of the Analytical Instrumentation Lab, has been around EES long enough to see it change almost as radically. When he started here as a research assistant almost twenty-five years ago, there was only one electron microscope in one room. Now, he oversees the use of two transmission electron microscopes, one scanning electron microscope, one electron probe microanalyzer, three spectrographs, 12 optical microscopes and X-ray diffraction equipment—all housed in about half the length of the second floor of the Baker Building. John said back then, the Station was small, too. He is amazed at the different fields of research becoming prominent, such as energy, productivity and international development. He feels the chemical and mechanical engineering research prevalent when he started has been entirely re-oriented to energy applications. Yet, he said, radar and electronics have always been strong and will probably remain so.

John is a man happy in his profession with a feeling of worth. His definition of AIL's work is that it utilizes complex instrumentation to analyze the fine structure of materials. "It gives a lot of satisfaction because we are making a contribution to industry and helping them solve their problems. It's a good feeling to help someone save thousands of dollars as we have in several instances." They also work in the biological field, such as looking at body lice and bacteria for the Center for Disease Control. John said in the past twenty years, AIL is able to utilize equipment for analyses which were not dreamed of when he started. He feels the scanning electron microscope will become more sophisticated and capable of higher resolution, resulting in an improved instrument with greater analytical ability to give more information about the specimen.

Not only has EES given John employment, but it also gave him the opportunity to meet his wife Dorothy. John related the story that he and another researcher were to move a desk to AIL. It was lunch time and they picked up what they thought was the correct desk. Later, an irate caller explained it was her desk containing her



John Brown of AIL

pay check they had appropriated. "After that, the least I could do was ask her out," he said. At that time, Dorothy was using her physics degree to do statistical analyses of radar reflections from sea water. She has since obtained her teacher certification and is currently working on an MBA at Georgia State. Their oldest son is a freshman at Georgia State majoring in aviation administration; their daughter is a pharmacist's assistant, a younger son is a high school junior, and the youngest son is a third grader.

John's physics degree is from Tech; he says because that line was shortest at registration. He started working on an advanced degree, but had to give it up when AIL expanded. Not finishing is one regret he has.

His physics background is helpful in several of his many hobbies. He has built a stereo projector for his stereo photographs; slides side by side which appear three dimensional. For his interest in astronomy, he has ground and figured lenses for photographing stars. "I'm a home maintenance type. We have six cars in the family I work on to keep running. Each child over 16 has a car, and my wife and I have three for us—to be sure at least two are operating at a time. I also built the downstairs part of our house."

And he is involved in making his own phonograph pickup cartridges for improved sound reproduction. His picture of a phonograph stylus in a record groove was taken in 1968 when AIL acquired the first scanning electron microscope in the Southeast. It has been shown in the Field Museum of Natural History in Chicago and is part of a traveling Smithsonian Institute exhibit of everyday objects seen from different perspectives. You can see some other photographs from AIL on the display boards in the Baker Building Lobby.

IDD Steps Up Field Assistance To Overseas Counterparts

Visiting IDD's counterpart in Brazil in April are **Nelson Wall**, **Dick Johnston** and **Gaston Parets**. Nelson is participating in a conference and providing general assistance under the Small Industry Grant program, Dick is advising FESSC on sources and methodologies for building up its economic data base, and Gaston is preparing an industrial study.

Ross Hammond will be in Ghana and Nigeria April 13-30. In Ghana he will be looking over the University of Science and Technology and its Industrial Consultancy Centre as a possible counterpart; in Nigeria he will present a seminar and do small-industry research at the University of Ife, an existing counterpart.

Kay Auciello of IDD's International Development Data Center will be working with counterpart data centers at Soong Jun University in Korea and the University of the Philippines Institute for Small-Scale Industries April 7-20.

Ben James will be at Soong Jun University April 7-May 9 providing industrial extension technical assistance under the Small Industry Grant program. (Watch it, Kay.)

IDD Welcomes Two Staff Additions

James V. DeMattei has joined the IDD staff as a senior research engineer. He heads up a new Adaptive Technology Section which will be concerned with appropriate technology for small industries in developing areas. He is an industrial engineer with extensive management and consulting experience.

Philip L. Hess is a new research engineer at IDD's Augusta Area Office, replacing **Lynn Tessner**, who recently was promoted to Head of IDD's Field Technical Support Section. He will assist in industrial and community development services to a 23-county area. He received his B.I.E. from Georgia Tech and his M.B.A. from Georgia State.

E. A. Bethea, IDD, attended the Southern Conference of Black Mayors in Grambling, La. Mar. 6-9.