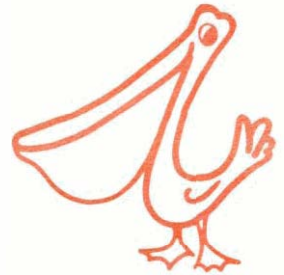


The Pelican

a newsletter for the F.I.T. family



VOLUME XV

FEBRUARY 1983

NUMBER 2

Computer speech is matched to humans in need

By Mary Deese
Information Specialist

With the aid of computer researchers at F.I.T., a Miami man who lost his ability to speak five years ago when he underwent extensive facial surgery has now gained a new voice.

For Ray Walton Sr. the new year looks brighter. He has regained verbal communications through the use of a modified computer with specialized programs built into a "micro-chip" inside the machine.

The service was designed and developed by Dr. Michael E. Valdez, professor of electrical and computer engineering.

Dr. Valdez is currently directing John Ertem and other F.I.T. graduate students in customizing computer equipment to meet individual needs of handicapped persons who have no ability to communicate verbally.

"At age 67, Walton had never used a computer and feared he was too old to learn. But as he sat down for the first encounter with the machine which provided him with voice communications, he found he could use it with ease," said Dr. Valdez.

In an F.I.T. computer laboratory, Walton began typing on the computer's keyboard and generated his first "spoken" words since the surgery mandated by cancer of the throat.

"I once made my living talking," the machine said on his behalf. "For 12 years prior to my operation I sold and built swimming pools in Miami."

Walton later noted that what he likes most about the computer is that it makes him independent in using the telephone. "All I have to do is take the telephone receiver and hold it over the speaker of the computer to communicate with the other party," said Walton.

"This is the first time my father has verbally communicated in five years. It brings tears to your eyes," said Ray Walton Jr., who is pursuing his doctoral degree in science education at F.I.T.

Walton said that he first learned of F.I.T.'s computer-aided service through Dr. Kerry Clark, professor of biology at F.I.T., after the service was explained in a university newsletter.

Walton Jr. recalled that he had earlier discussed his father's condition with Dr.



A time for 'talk'

Dr. Michael Valdez aids Ray Walton Sr.

Clark and reviewed articles in a computer magazine about assistance to the handicapped.

"Most of the computers currently available for persons with my father's problem required you to be a computer wizard just to operate them," said Walton. With Dr. Valdez's computer and programs, his father could instantly "talk" as fast as he could type.

A Rockwell Aim 65 microcomputer is now used by Walton to speak to others. The small computer weighs only about 10 pounds and looks like a portable typewriter. But it has a small display screen and printer built into it.

When Walton types what he wants to

say, some 500 linguistic rules on a micro-chip contained in the computer allow it to understand his words, and translate them to spoken words. A voice synthesizer attached to a speaker produces the spoken words.

About 100 of the linguistic rules were developed by Dr. Valdez at F.I.T. The rest were developed several years ago at the Naval Research Laboratory in Washington, D.C.

The small computer, with specialized programs built into it, cost the Walton's \$1,000.

"I am currently working to insert the "micro-chip" in other-brand micro-computers so that the entire unit would cost only \$400," said Dr. Valdez.

Assignments announced

The appointments of Dr. Jane LeMoine as Head of the Humanities Department and Dr. Thomas Bowman as Dean of the Graduate School have been announced by Dr. John Miller, Vice President for Academic Affairs.

Both assumed responsibilities for their new posts in "acting" capacity in 1982.

LeMoine joined F.I.T. in 1978 as the first director of the Individual Learning Center, and as an assistant professor of English. She

completed undergraduate work at the University of California - Santa Barbara, and holds her master's and doctoral degrees in English from Florida State University.

Bowman, who joined F.I.T. in 1969, has since 1978 served as Head of the Mechanical Engineering Department. He earned his undergraduate and master's degrees from California Institute of Technology, and his doctoral degree in mechanical engineering from Northwestern University.

Campus notes

Dr. **William S. Alevizon**, associate professor in Biological Sciences, spoke on "Statistical Analysis of Visual Population Estimates," at an Atlanta workshop sponsored by the Southeastern Division of American Fisheries Society. **Alevizon's** talk concerned various ways of analyzing data on the number and **species** of fish present in a given area.

Alevizon also presented a seminar on his research concerning "Population Structures of Bahamian Reef Fishes" to the Zoology Department at the University of Georgia. **Alevizon** has been investigating the distribution and abundance of reef fishes for the past three **years** at Deep Water Cay, located in the Bahamas.

Dr. **Alan Rice**, assistant professor in Oceanography and Ocean Engineering, recently published a paper on "Soret Convection and **Rheology** (Viscous Dissipation): Arguments for Whole Mantle Convection."

Rice also recently served as a delegate to the annual national meeting of Sigma Xi Scientific Research Society, held in Houston. Rice is secretary for the F.I.T. **Sigma Xi Club**.

Dr. **Arvind M. Dhople** of the Medical Research Institute was recently visited by Dr. **Jindrich Kazda**, chief of microbial ecology for Borstel Institute in Germany, and Dr. **Laszlo Kato**, director of research for the Catherine Booth Hospital, Montreal.

All three investigators are being supported by the German Leprosy Relief Association in their studies on *in vitro* cultivation of leprosy **bacillus**. The meeting resulted in a joint collaborative program between the three institutes on the cultivation research.

Kazda also met with Dr. Eleanor **Storrs**, head of the **Mammalogy** and Comparative Biochemistry Division of M.R.I. to set up a collaborative program in establishing a "European Armadillo Center" in Borstel. **Storrs** has pioneered the use of armadillos in leprosy **research**.

Dr. **James R. Sharber**, associate professor in Physics and Space Sciences, presented a paper entitled "Comparison of DE-2 Soft Particle Observations with 6300 A Measurements in the Polar Cap," to the American Geophysical Union in San **Francisco**. "DE-2" refers to Dynamics Explorer 2, a NASA low-altitude polar satellite.

Dr. **George K. Kostopoulos**, professor in Electrical and Computer Engineering, presented a two-week seminar on "Design of **Microprocessor** Based Industrial Control Systems" to the Algerian National **Institute** of Electrical Engineering at **Boumerdes**. Kostopoulos also attended the Gulf Coast Computer Exhibit in Houston.

Dr. **Junho Choi**, assistant professor in Electrical and Computer Engineering, visited the University of Florida's Robotic

Center. The purpose of his trip was to learn about both laboratory and curriculum organization involving inter departmental cooperation in computer usage.

Dr. John **Hadjilogiou**, professor and head of Electrical and Computer Engineering, attended the American Society for **Electrical Engineers (ASEE)** "Frontiers in Education Conference" held in Columbia, SC.

A total of five papers were recently presented to the American Society of Zoologists annual meeting in Louisville, KY, by members of F.I.T.'s Biological **Sciences** Department. Presenters included

Dr. **Terry D. Oswalt**, of Physics and Space Sciences, visited the Flagstaff Observatory in Arizona recently to make photometric observations of some eclipsing **binary** stars.

Dr. James G. Potter, professor of physics, addressed physics students at Palm Bay and **Seabreeze** high schools on careers in physics. He also spoke on the subject of "weightlessness." Potter also addressed the faculty at Daytona Beach Community College on "The Crisis in **Pre-College** Science Education."

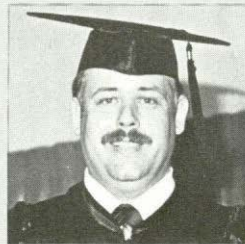
Jerome **A. Lauderbaugh**, dean of the

Branson gets degree, award

How does one balance working, going to school and family life?

"One day at a time," said Paul M. Branson modestly. At age 31, Branson has earned his bachelor's degree in aviation management from F.I.T., and is the recipient of the university's Faculty Scholarship Award. He is also the father of two children and manager of the Taco Bell restaurant located in Palm Bay.

The award is presented at each F.I.T.



Paul Branson

commencement to the graduating senior with the highest grade-point-average (GPA). Branson received a gold medal and plaque at F.I.T.'s Fall Commencement for graduating with an outstanding 3.88 GPA.

"I was really excited and surprised about receiving the award. I understand that this plaque entitles me to a free cup of coffee anywhere I go," Branson joked.

Branson undertook a steady 12 academic credit hours per quarter and completed his bachelor's degree at F.I.T. in three years.

Prior to that, Branson served in the U.S. Air Force. He began undergraduate studies at the University of Arizona.

Branson currently resides in Melbourne with his wife, Susan, daughter Lisa, age 4, and son Jason, age 9.

Dr. **Kerry B. Clark**, Dr. John Morris, Dr. Cathy Steel and graduate students Denise Thompson, William Dobson and Duane **DeFreese**.

Recent Biological Sciences publications include work by Clark, in the "Journal of **Experimental Marine** Biology and Ecology," and by Dr. Kenneth L. **Kasweck**, associate professor in Biological Sciences, in "Applied and Environmental Microbiology."

Dr. Anne **Rowe**, associate professor in Mechanical **Engineering**, attended the annual meeting of the Society of Women **Engineers (SWE)** held in Orlando. The meeting included sessions on **personal** computers, robotics, Shuttle projects and EP-COT. Rowe is currently president of the Florida chapter of SWE.

Dr. Albert G. Guy, visiting professor of physics, recently received a Fulbright Fellowship to spend six months in **Hungary** working in the field of **non-equilibrium** thermodynamics. Work will concentrate on several problems in conductivity in solids to which Guy has been applying advanced thermodynamics methods.

School of Aeronautics, recently announced the appointment of Curtis **C. Truver** to the position of director of the F.I.T./**Jacksonville** University Cooperative Aviation Program. Truver, an aeronautical engineer and retired U.S. Air Force officer and aviator, has logged thousands of hours as a pilot. **Truver** has also served seven years at F.I.T. as head of the department of Flight **Technology**. He holds a master's degree in business administration from George Washington University.

Dr. **Thomas V. Belanger**, assistant professor of Environmental Science, attended the 55th annual Water Pollution Control Federation Conference in St. Louis.

Robert Goldberg, Chief of Visual Arts in the Public Affairs **Department**, saw one of his photos honored as the winner of national competition sponsored by "Industrial Photography" magazine. The photo was submitted as a solution to **problems** posed by night-time **photography**.

Goldberg's photo depicts the Melbourne campus as seen from the top of **Crawford Science Building** during the night launch of a rocket from Air Force facilities near Ken-

Manatee 'conversations' studied

By Mary Deese

Researchers at F.I.T. have uncovered evidence of manatee "talk."

For the past two years, Dr. John Morris, associate professor of Biological Sciences, and Cathy Steel, doctoral candidate in the Biological Sciences program, have been involved in one of the first intensive studies of manatee sounds, and behavior patterns associated with certain manatee sounds.

Manatees are warm-blooded, air-breathing animals that inhabit the Florida coastal waters and various inland waterways. Also known as sea cows, the adults emit clear harmonious sounds similar to a squeak or squeal. Infants emit a sound similar to that of birds chirping.

"Only about 1,000 manatees currently survive in Florida, under federal protection. Their numbers are dwindling rapidly, with Brevard County reporting the highest fatality rate of manatees in Florida," said Dr. Morris.

Dr. Morris explained that the slow-moving mammals are difficult to see when surfacing for air. They are often severely injured or killed as a result of collision with boats and barges. The adult manatee can weigh up to one ton and grow in size from 10 to 14 feet.

Dr. Morris said that "red tide" epidemics and cold weather also help account for the high fatality rate of the manatee in Brevard

County.

To date the researchers have studied several manatees and their sounds in environments ranging from the natural habitats of the Homosassa River and Homosassa Springs Attraction — a spring-fed natural lagoon, to the controlled habitat of cement tanks at Sea World.

The researchers used a hydrophone attached to a recorder and amplifier to pick up manatee sounds.

Individual manatee sounds recorded in all three environments were converted to computer language and the results analyzed.

Steel said that her findings reveal at least 13 distinct manatee sounds.

"From the montage of sounds, I can determine differences in sex and age of the manatee in all three environments," said Steel.

Steel believes a distress call is emitted by the young manatee when it is away from its mother, and when the animal flees from an approaching diver.

Steel said playful behavior is exhibited when a nursing manatee nudges a hydrophone, or when it is petted by humans. In both cases the animal emits a distinct sound.

Future plans call for playing back the recordings in Crane Creek and in other inland waterways on the East Coast to determine how manatees in the areas react.



Dr. John Morris and recently graduated Dr. Cathy Steel check manatee sounds.

Grant 'computes'

A \$58,900 challenge grant from the Edyth Bush Charitable Foundation Inc. has been awarded to F.I.T. in support of a computing center envisioned for a new \$5.7 million library.

The grant will make possible the establishment of a computing center in the new library, announced Director of Development Ralph Johnson.

To qualify for the new grant money, he noted, F.I.T. must solicit donations of library support in the same amount as that offered by the Foundation. That money, plus the grant amount, will be used in establishing the computer center.

"The computing center in our new Evans Library will be one of the first in the country to offer the student a complete description and use of some 450 commercially available software packages," Johnson said. The users will also have immediate access to small computers on which to use those programs.

In addition to the software packages, the grant money will be used to purchase 10 remote terminals to allow users to access the computers in the university's Academic Computing Facility.

In addition, Johnson said, grant money is provided to purchase microfilm copies of periodicals including journals required by F.I.T.'s School of Psychology.

Center offers variety of services

By Dr. Richard Elmore Jr.
Director

The Center for Student Development would like to remind you of a vital resource. A large part of the Center's focus is to meet the needs of students, but we also extend our services to F.I.T. staff and family members. The services are free to the F.I.T. community.

Our staff has a diverse range of abilities which is reflected in the variety of services offered. This includes evaluation and treatment of marriage and family problems, psychological testing, personal development counseling, child evaluations and treatment (learning problems, intelligence testing, behavior

management and discipline problems, developmental screenings), vocational aptitude testing and career counseling, evaluation of study skills including memory and concentration, and group counseling (stress management, weight control, decision making, assertiveness training, personal growth).

The Center staff includes doctoral candidates in clinical and counseling psychology working under supervision of the faculty within the School of Psychology. We are open Monday through Friday from 9 a.m. to 6 p.m. To find out more about us please call 723-3701, ext. 337. Your involvement with the Center is kept strictly confidential.

Campus notes (cont'd)

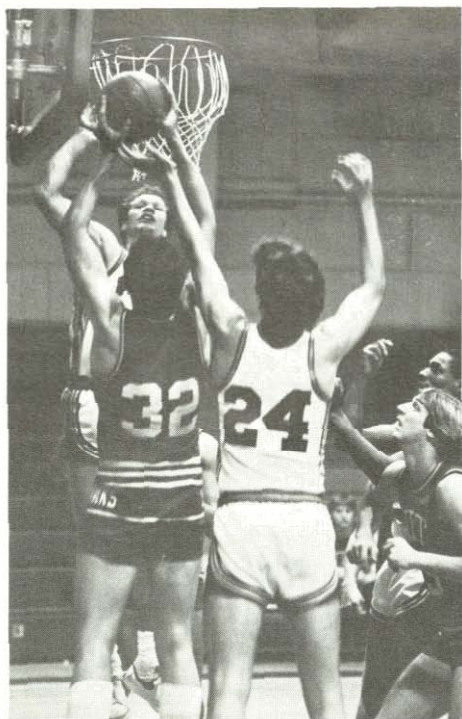
Space Center. The photo depicts F.I.T. in the foreground, Melbourne in the midground, and the launch in the background. The photo was used on the cover of a recent F.I.T. publication describing research activities, entitled 'launching A New Era.'

At the Fort Lee, VA site for Off-Campus

Programs, Maj. Max H. Taylor was presented the Society of Logistics Engineers award for the best research paper. The award was made during the 19th F.I.T./Army Logistics Management Center Cooperative Degree Program commencement exercise. The paper was on management of industrial plant equipment.

Also at Fort Lee, operations research

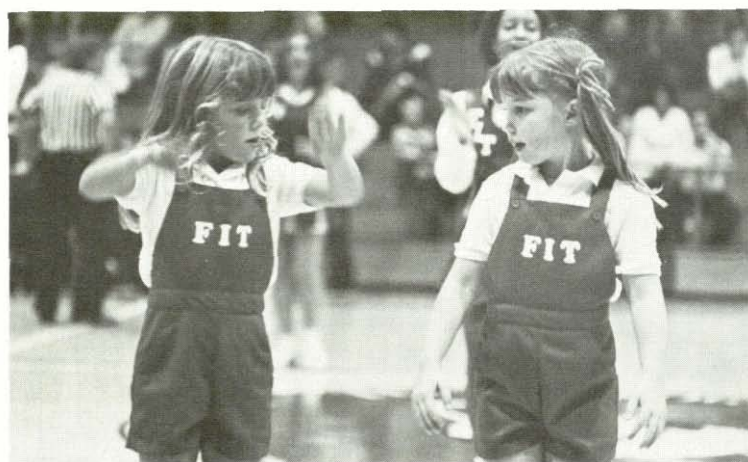
graduate students received letters of appreciation from the Army as a result of work to automate portions of the MILPERCEN Force Implementation Plan. Saluted were Capt. Bernard Johnson, Maj. Paul Setcavage, Capt. Bobby Chin and Capt. William Eggers. Presenting the letters was Col. William H. Creed (retired), resident director.



WATCHERS



THE MANY FACES tuned to Engineers' basketball at recent home games include, pictured above, Larry Popolizio (left), Lou Villani, Ed Quiroga, and Dick Reisch. At right, Coach Roger Dufour (left) and assistant Dick Smith concentrate on the action. Below, daughters Alleha Dufour (right) and Brianna Smith practice for their part in the action, while varsity cheerleaders do their best.



Photos by R. Goldberg



News of the campus

Both the City of Melbourne and the Brevard County Commission saluted F.I.T. in resolutions during January that coincided with "Independent Higher Education Month throughout Florida.

Security Director Don Null reports a completion of the move of the Security Office to Shaw Hall, just off University Boulevard. The office will also handle "lost and found" items.

Alumni Association President James Irvin has extended invitations to faculty members and administration officials desiring to attend a banquet on Alumni/Faculty Day, February 19. Reservations can be made by calling the Alumni Office, extension 261.

Personnel Director Pat Murphy has announced that generous employees pushed the F.I.T. United Way contribution beyond the \$5,000 mark for the first time.



Dr. Jon Knight

Dr. Jon Knight offered local business leaders some encouraging economic information for 1983 as he spoke before the Melbourne Area Chamber of Commerce's "Early Bird Breakfast" in the All Purpose Room. Knight's forecasts are based on a computerized "econometric model" of business and consumer activities. Before joining F.I.T., the associate professor of economics was the director of economic forecasting for the Florida legislature.

Off-Campus Programs' newest site has been established at Headquarters, U.S. Army Materiel Development and Readiness Command (DARCOM) in Alexandria, Va., according to an announcement by Ed Gudgel, program director.

He may have been several days late, but alum Steve B. Manyimo of Voorhees, NJ was not a dollar short. His offering was, in fact, a generous one. It was contributed to "The Spirit of '76 Development Program" solicitation staged by F.I.T. several years back. "Sorry about the delay," he wrote, "I hope it's not too late." Never, Steve.

And speaking of money, the Kappa Alpha Psi fraternity members — nine strong — worked at special projects to come up with \$500 to donate to the university's emergency loan fund. Frat VP Joseph Steward explained that the national office kicked in another \$500 in matching cash, all of which was accepted by a smiling financial aid officer, Jack Hughes.