Environment is the topic of graduate's decade-long study

P

picture yourself in the middle of a fish farm in the future, surrounded by world food crops growing in controlled environments. You view plants growing in what was once a desert, had been transformed into a garden. Other plants are suspended in air, as they might grow inside a space station.

Next, you are bathed in red light as you enter a "aquaculture" where a variety of food fish are raised. Some are later served at a nearby restaurant.

Though the scenes may sound like flights of the imagination, they are very much a part of the real-world environment of F.I.T. graduates Mike Andrew and Jane Evans.

The dream is really the "Disney magic" found in the "Harvest Tour" portion of the "Listen to the Land" attraction at Walt Disney World's EPCOT Center near Orlando. That attraction is part of a six-acre pavilion called "The Land." Andrew and Evans are among the team of specialists at The Land who enlighten the public about the unique agriculture and aquaculture growing systems located there.

The two F.I.T. graduates were hired by Peter C. Cook, a technical specialist in aquaculture for Disney. He is responsible for all aspects of aquaculture. "We couldn't have picked a better crop of aquaculturists, they are well suited for what they are doing here and are qualified to do much more," said Cook. He explained that he chose Evans and Andrew for the job after reviewing resumes from around the country. He was impressed by their "well-rounded" academic backgrounds and their enthusiasm toward working in the field.

The two Florida natives received B.S. degrees in environmental science at the Jensen Beach campus, Evans last June and Andrew in March of 1982.

"The principle emphasis at F.I.T. was on the farming of food fish because that is where the future of aquaculture seemed to be," said Andrew as an agricultural technician, the two assist Cook in the operation of a unique aquacel where a variety of fish are raised for exhibition and harvest. Current plans call for harvesting 6,000 pounds of fish on a quarterly basis. The fish are served in the restaurants of Walt Disney World.

Though most visitors ride attraction boats through the exhibit area, a limited number are guided on walk-through tours hosted by the two F.I.T. graduates or other specialists of The Land.

Andrew and Evans are more involved in educating the public about aquaculture than the actual process of fish farming. And that is no accident. They believe the more consider more than 22 million people have visited EPCOT since it opened just over a year ago.

"Basically, aquaculture involves the farming of any aquatic organism," explained Andrew. "You can think of The Land as the center for organisms grown at The Land includecichlids, tilapia (anectic fish from Africa) and eels. Texas and China have been doing it for centuries, but it is just beginning to emerge in the U.S. as an important business," said Andrew.

The main aquaculture today is conducted by individuals who enter cooperatives to purchase large tracts of land for ponds. By business accounts for only a small part of aquaculture, and most often "raceways" or cement pools are used to hold their fish.

Continued on back page
George Stirbola (MS-Space Tech.) resides in Thousand Oaks, CA, and is employed as a manager for R2S Rosco Electronic Systems in Glendale.

Ira B. Cottrell (BS-Math) tells us he is a computer analyst at Sperry Corporation in Dahlgren, VA, and lives in King George, VA.

Scott W. Meade (AS-Air Comp. Bus.) captain flying a "Westwind 2" business jet for the Cessna Corporation in Teterboro, NJ. He and wife Nancy celebrated their first wedding anniversary in August and are making their home in Danville, NJ. Congratulations!

William Eintinger (BS-Geo. Ocean.) is attending University of Florida and pursuing a master's degree in mechanical engineering. He is living in Gainesville, (Good luck William).

Richard Stifler (BS-ME) lives in Blacksburg, VA, and is completing his Ph.D. in materials engineering science at Virginia Polytechnic Institute. If you have any questions or would like to get together with old F.I.T. friends who may be in his area or who plan to pass through, please contact him.

F. Bruce Kovacs (BS-ME) has set up his own consulting firm in industrial radiography and radiation safety in Randolph, NJ. In March he was appointed to the Subcommit- tee on Nondestructive Examination of the NACE Butler and Pressure Conference. Bruce has been residing in Randolph for eight and a half years, is still single, and would like to get together with old F.I.T. friends who may be in his area or who plan to pass through.

Clinton M. Hamilton (BS-ME) is technical supervisor at the Bell Laboratories in Palatine, IL, and is part of a group hav- ing responsibility for quality analysis (reliability, manufacturing quality, physical design and software quality) for interference and distribution transmission products used in the Bell System. Clinton and wife Lisa and four-month-old son, Scott, live in Freehold, NJ. He received his MS-ME in '76 from the State University of New York - Buffalo.

Roderic A. Amende (BS-Biology) is a captain in the Army, and has been selected to command the service's most prestigious engineer company in support of the elite Berlin Brigade, Defenders of Freedom in Western Europe.

David R. Motschman (BS-Phys. Ocean.) is a senior associate engineer at IBM in Rochester, MN.

Robert Smelzer (BS-Air Comp. Comp.) is residing in Palatine, IL. He is employed by United Airlines as a second flight officer on a B-727 and flies out of Chicago.

Robert L. Smith Jr. (BS-Applied Math.) is a senior associate computer programmer at IBM in Endicott, NY. He presently is living in Johnson City, NY.

Scott W. Meade (AS-Air Comp. Bus.) captain flying a "Westwind 2" business jet for the Cessna Corporation in Teterboro, NJ. He and wife Nancy celebrated their first wedding anniversary in August and are making their home in Danville, NJ. Congratulations!

William Eintinger (BS-Geo. Ocean.) is attending University of Florida and pursuing a master's degree in mechanical engineering. He is living in Gainesville, (Good luck William).

Richard Stifler (BS-ME) lives in Blacksburg, VA, and is completing his Ph.D. in materials engineering science at Virginia Polytechnic Institute. If you have any questions or would like to get together with old F.I.T. friends who may be in his area or who plan to pass through, please contact him.

F. Bruce Kovacs (BS-ME) has set up his own consulting firm in industrial radiography and radiation safety in Randolph, NJ. In March he was appointed to the Subcommit- tee on Nondestructive Examination of the NACE Butler and Pressure Conference. Bruce has been residing in Randolph for eight and a half years, is still single, and would like to get together with old F.I.T. friends who may be in his area or who plan to pass through.

Clinton M. Hamilton (BS-ME) is technical supervisor at the Bell Laboratories in Palatine, IL, and is part of a group hav- ing responsibility for quality analysis (reliability, manufacturing quality, physical design and software quality) for interference and distribution transmission products used in the Bell System. Clinton and wife Lisa and four-month-old son, Scott, live in Freehold, NJ. He received his MS-ME in '76 from the State University of New York - Buffalo.

Roderic A. Amende (BS-Biology) is a captain in the Army, and has been selected to command the service's most prestigious engineer company in support of the elite Berlin Brigade, Defenders of Freedom in Western Europe.

David R. Motschman (BS-Phys. Ocean.) is a senior associate engineer at IBM in Rochester, MN.

Robert Smelzer (BS-Air Comp. Comp.) is residing in Palatine, IL. He is employed by United Airlines as a second flight officer on a B-727 and flies out of Chicago.

Robert L. Smith Jr. (BS-Applied Math.) is a senior associate computer programmer at IBM in Endicott, NY. He presently is living in Johnson City, NY.

Scott W. Meade (AS-Air Comp. Bus.) captain flying a "Westwind 2" business jet for the Cessna Corporation in Teterboro, NJ. He and wife Nancy celebrated their first wedding anniversary in August and are making their home in Danville, NJ. Congratulations!

William Eintinger (BS-Geo. Ocean.) is attending University of Florida and pursuing a master's degree in mechanical engineering. He is living in Gainesville, (Good luck William).

Richard Stifler (BS-ME) lives in Blacksburg, VA, and is completing his Ph.D. in materials engineering science at Virginia Polytechnic Institute. If you have any questions or would like to get together with old F.I.T. friends who may be in his area or who plan to pass through, please contact him.

F. Bruce Kovacs (BS-ME) has set up his own consulting firm in industrial radiography and radiation safety in Randolph, NJ. In March he was appointed to the Subcommit-tee on Nondestructive Examination of the NACE Butler and Pressure Conference. Bruce has been residing in Randolph for eight and a half years, is still single, and would like to get together with old F.I.T. friends who may be in his area or who plan to pass through.

Clinton M. Hamilton (BS-ME) is technical supervisor at the Bell Laboratories in Palatine, IL, and is part of a group hav- ing responsibility for quality analysis (reliability, manufacturing quality, physical design and software quality) for interference and distribution transmission products used in the Bell System. Clinton and wife Lisa and four-month-old son, Scott, live in Freehold, NJ. He received his MS-ME in '76 from the State University of New York - Buffalo.

Roderic A. Amende (BS-Biology) is a captain in the Army, and has been selected to command the service's most prestigious engineer company in support of the elite Berlin Brigade, Defenders of Freedom in Western Europe.

David R. Motschman (BS-Phys. Ocean.) is a senior associate engineer at IBM in Rochester, MN.

Robert Smelzer (BS-Air Comp. Comp.) is residing in Palatine, IL. He is employed by United Airlines as a second flight officer on a B-727 and flies out of Chicago.

Robert L. Smith Jr. (BS-Applied Math.) is a senior associate computer programmer at IBM in Endicott, NY. He presently is living in Johnson City, NY.

Scott W. Meade (AS-Air Comp. Bus.) captain flying a "Westwind 2" business jet for the Cessna Corporation in Teterboro, NJ. He and wife Nancy celebrated their first wedding anniversary in August and are making their home in Danville, NJ. Congratulations!

William Eintinger (BS-Geo. Ocean.) is attending University of Florida and pursuing a master's degree in mechanical engineering. He is living in Gainesville, (Good luck William).

Richard Stifler (BS-ME) lives in Blacksburg, VA, and is completing his Ph.D. in materials engineering science at Virginia Polytechnic Institute. If you have any questions or would like to get together with old F.I.T. friends who may be in his area or who plan to pass through, please contact him.

F. Bruce Kovacs (BS-ME) has set up his own consulting firm in industrial radiography and radiation safety in Randolph, NJ. In March he was appointed to the Subcommit- tee on Nondestructive Examination of the NACE Butler and Pressure Conference. Bruce has been residing in Randolph for eight and a half years, is still single, and would like to get together with old F.I.T. friends who may be in his area or who plan to pass through.

Clinton M. Hamilton (BS-ME) is technical supervisor at the Bell Laboratories in Palatine, IL, and is part of a group hav- ing responsibility for quality analysis (reliability, manufacturing quality, physical design and software quality) for interference and distribution transmission products used in the Bell System. Clinton and wife Lisa and four-month-old son, Scott, live in Freehold, NJ. He received his MS-ME in '76 from the State University of New York - Buffalo.

Roderic A. Amende (BS-Biology) is a captain in the Army, and has been selected to command the service's most prestigious engineer company in support of the elite Berlin Brigade, Defenders of Freedom in Western Europe.

David R. Motschman (BS-Phys. Ocean.) is a senior associate engineer at IBM in Rochester, MN.

Robert Smelzer (BS-Air Comp. Comp.) is residing in Palatine, IL. He is employed by United Airlines as a second flight officer on a B-727 and flies out of Chicago.

Robert L. Smith Jr. (BS-Applied Math.) is a senior associate computer programmer at IBM in Endicott, NY. He presently is living in Johnson City, NY.
F.I.T. Corporation initiates long-range planning

Leads to long-range planning. The four committees, five of the F.I.T. Corporation's committees, are involved in the development of the plan. Scheduled to complete in May.

The second long-range plan will identify the university's major goals for the next five years. It will present a comprehensive plan for the university by identifying university resource requirements in the areas of predicted student enrollment. These resource requirements include faculty, buildings and laboratory equipment.

Lamb notes that the plan will provide a general framework for the Corporation to develop the F.I.T. and M.I.T. to share this? We educate, and we do research. Yes, we are interested in the community, to the extent that we ensure that they will be better qualified to be promoted as our company grows. We do this.

The Governmental Outreach Committee was established to ensure that various governmental organizations throughout Florida, and that is an important factor.

The visiting committees are the eyes and the long-range planning committees, said Kinney. He explained that those committees continue to work closely with the individuals of key departments and lead to assess their goals. Three other visiting committees will soon be established to each of the university's five schools.

Two other committees of the F.I.T. Corporation are involved as a university. Innovative, educational, innovative programs designed to meet the special needs of local industry and

M.I.T. also represented

The following remarks are excerpts from a speech by Dr. Vincent Fulmer, Secretary of the M.I.T. Corporation, before members of the F.I.T. Corporation.

You bring me greetings from M.I.T. to its significant role in Florida and its distinguished alumni. Jerome J. Keuper.

We have awarded 100,000 degrees at M.I.T. Since 1861, only two out of our graduates serves as presidents of colleges and universities and the world. We are pleased to have them back this year, the president of the University of California, to serve as chair of our corporation. - David S.axon.

Like Jerry Keuper he is a physicist. University. We did not do this? We educate, and we do research. Yes, we are interested in the community, to the extent that we ensure that they will be better qualified to be promoted as our company grows.

We do this.

The Governmental Outreach Committee was established to ensure that various governmental organizations throughout Florida, and that is an important factor.

The visiting committees are the eyes and the long-range planning committees, said Kinney. He explained that those committees continue to work closely with the individuals of key departments and lead to assess their goals. Three other visiting committees will soon be established to each of the university's five schools.

Two other committees of the F.I.T. Corporation are involved as a university. Innovative, educational, innovative programs designed to meet the special needs of local industry and

M.I.T. also represented

The following remarks are excerpts from a speech by Dr. Vincent Fulmer, Secretary of the M.I.T. Corporation, before members of the F.I.T. Corporation.

You bring me greetings from M.I.T. to its significant role in Florida and its distinguished alumni. Jerome J. Keuper.

We have awarded 100,000 degrees at M.I.T. Since 1861, only two out of our graduates serves as presidents of colleges and universities and the world. We are pleased to have them back this year, the president of the University of California, to serve as chair of our corporation. - David S.

Like Jerry Keuper he is a physicist. University. We did not do this? We educate, and we do research. Yes, we are interested in the community, to the extent that we ensure that they will be better qualified to be promoted as our company grows.

We do this.
New computer education program will benefit teachers

With more than 6,000 microcomputers currently in use for instruction in Florida elementary and high schools, F.I.T. is taking a leadership role in training teachers to use the machines. As of the Winter Quarter, the Science Education Department will be among the few university programs in the state to offer a master's degree program in computer education.

"The degree program is aimed at high school and elementary school teachers with a wide variety of teaching backgrounds," says Dr. Robert H. Fronk, head of Science Education. "Many of these teachers hold college degrees in history or English, have a strong desire to learn more about microcomputers, but lack the prerequisite undergraduate science and math courses necessary for admission into a graduate-level program in computer education." The program will offer high school teachers the opportunity to work towards a master's degree in computer education.

"We hope the teachers we train through this new degree program will return to their schools and help lead the way in the introduction of microcomputers into their schools," he added.

Persons seeking admission into the new program must have a bachelor's degree and be proficient in college Algebra and "BASIC" — the most widely used computer programming language in elementary and secondary schools. The degree program will be taught cooperatively by faculty members from Computer Science and Science Education. Persons enrolled in the program will take specialized courses in several computer languages including advanced BASIC, Pascal, LOGO and PILOT.

Fronk said the program will offer multi-benefit programs for teachers. "If teachers know how to design computer programs for their particular class, then they will have a better idea of what to look for when evaluating instructional software," he noted.

Fronk said that state law already requires students to take computer courses in order to earn a high school diploma.

Who's Who honors F.I.T. students

The names of 25 FIT students studying at the Melbourne campus have been included in the 1984 edition of Who's Who Among Students in American Universities and Colleges. The students honored are selected as "national outstanding leaders," according to an announcement from the director. The annual publication, headquartered at Tuscaloosa, Ala., was first published in 1932.

Selection is on a d academic achievement, service to community, leadership in extracurricular activities, and potential for national representation, according to universities. Each campus nominating committee submits a list of candidates for review by directory editors.

Students honored by Who's Who include:

- John Alan Holland, electrical engineering, Deltona, Fla., was named to the 1984 Who's Who. Holland was chosen for his work in electrical engineering.
- John Alan Holland, electrical engineering, Deltona, Fla., was named to the 1984 Who's Who. Holland was chosen for his work in electrical engineering.
- John Alan Holland, electrical engineering, Deltona, Fla., was named to the 1984 Who's Who. Holland was chosen for his work in electrical engineering.
- John Alan Holland, electrical engineering, Deltona, Fla., was named to the 1984 Who's Who. Holland was chosen for his work in electrical engineering.

The students selected are among the 100,000 persons so honored from 1,500 colleges and universities in the U.S. and several other nations, according to an announcement from the director. The annual publication, headquartered at Tuscaloosa, Ala., was first published in 1932.

Selection is based on academic achievement, service to community, leadership in extracurricular activities, and potential for national representation, according to an announcement from the director. The annual publication, headquartered at Tuscaloosa, Ala., was first published in 1932.

Students honored by Who's Who include:

- John Alan Holland, electrical engineering, Deltona, Fla., was named to the 1984 Who's Who. Holland was chosen for his work in electrical engineering.
- John Alan Holland, electrical engineering, Deltona, Fla., was named to the 1984 Who's Who. Holland was chosen for his work in electrical engineering.
- John Alan Holland, electrical engineering, Deltona, Fla., was named to the 1984 Who's Who. Holland was chosen for his work in electrical engineering.
- John Alan Holland, electrical engineering, Deltona, Fla., was named to the 1984 Who's Who. Holland was chosen for his work in electrical engineering.
his MBA from the University of Central Florida.

Alan Bynder (BS-Civ. Eng.) resides in Summit, N.J., and is an executive vice-president for Amertek Internationals. Alan has upgraded his FAA license to air transport pilot, captain in C-402s, second officer of B-747s, and is working for Eastern Airlines.

Duanie Dobson (MS-Bio.) has just returned from a graduate exchange program to Sweden. He's an executive committee member of the National Association of Biology Teachers. He is currently pursuing a Ph.D. in biology here at F.I.T.

Paul Walten (BS-Air. Cont.) is living in Ridgewood, NJ, and is employed at Aerospace Services International at Teterboro Airports. NJ, and Bailey Aviation at Newark Airport, NJ. Warren Righter (BS-Ocean. Eng.) has recently been employed by the Dept. of the Navy as a quality assurance engineer in Corona, CA. His internship lasts three years with a different field assignment every six months. As of January 1984, he will be assigned to Portland, VA.

James D. Winkler (BS-Air. Cont.) is a second lieutenant in the Air Force and attending flight training at Del Rio, TX. Lisa Wyckoff (BS-Maj. Sci.) is a project engineer for RMC, Research Inc. at River Edge, NJ. She tells us that E.M.I. is a market research firm which does mostly media research. She loves her job.

Shawn DeHoff (BS-Cont. Ocean) is pursuing a master's degree in geology at Penn State and residing in eastern Pennsylvania. Charles B. Nelson (BS-Ocean. Eng.) is living in Philadelphia and working for the Navy at the Philadelphia Naval Shipyard in an electronics field.

Ted Hovey (BS-Cont. Ocean.) is working for RCA Corporation in Camden, NJ, and lives in Vermont.

Brett Halsey (BS-Geo. Ocean.) is residing in Philadelphia and employed by Sperry Corporation as an analyst/programmer. Brett has kept in touch with several alumni and has supplied us with some valuable information. He is hoping to relocate in the Philadelphia area, so if you know of any of your positions in your companies (locally) that may have use for his services, please contact us.

Diana Daily (Boucher) (BS-Air. Cont.) is married to Mack Boucher (BS-Ocean. -91) who is a nuclear trainer for Sea World in Orlando. Diana is a communications specialist in the operations department at Disney International Airport. (Congratulations!!!)

Donald A. Stewart (Psy.D.) recently joined the clinical practice of psychology as director of psychology with Drs. R.J. O'Halloran and H.E. Bernstein in Martin Island, FL. Wife Cathy and 18-month-old daughter Meaghan are feeling beautiful, he says. (Congratulations.)

**CAN YOU HELP US LOCATE THESE GRADS?**

<table>
<thead>
<tr>
<th>GRADUATE</th>
<th>GRADUATION DATE</th>
<th>DEGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRAIG GRAMMER</td>
<td>1975</td>
<td>MS-Lit., Mgmt. Finance</td>
</tr>
<tr>
<td>JOHN MURRAY</td>
<td>1979</td>
<td>BS-Chem. Eng.</td>
</tr>
<tr>
<td>KANDACE KRAMER</td>
<td>1982</td>
<td>BS-Air. Cont.</td>
</tr>
</tbody>
</table>

**Board of Directors are at work**

The Board of Directors of the F.I.T. Alumni Association met on September 28, 1983. At that time, several policies were revised and implemented. These items of importance included:

1. Elimination of the requirement for membership fees in favor of a $15 renewable membership fee or $1 of an alumni donation. The $1 fee is a token fee so that membership cards are generated only for those with some interest in the association, rather than perfunctorily for every alumni.

2. Definition of F.I.T. alumni to include only those who were granted a degree from F.I.T. This excludes alumni who attended but did not graduate from F.I.T.

3. Implementation of a Friday afternoon event at the beginning of Alumni Weekend. This event is to be attended by alumni, faculty and students, in an effort to promote the interaction of graduates and present students, share ideas, employment information and college experience. Scheduled for February 1987.

4. Design and distribution of new F.I.T. Alumni decal to all alumni with current addresses.

5. Recommendation for "split-freewe" in Annual Giving program whereby alumni have option to support others for the year or area of preference. Main theme for 1984-85 to be "Buy-A-Book" campaign for new library.

Other subjects discussed with decisions pending: 1) Preliminary alumni weekend itinerary, schedule; 2) annual graduation event each quarter by alumni association for graduating seniors; 3) Initiating network for locating lost alumni; and 4) Organization and distribution of alumni pocket including survey, recent data, and calendar of events for alumni weekend by end of November 1983.

**Annual giving for new library**

by Judi Marino

P.R.T. is launching an Annual Giving Campaign in early December.

The Evans Library is progressing at an amazing speed. The skeletal structure is in all place, tons of cement have been poured, and A.C. ducts and systems are in electrical wiring is being worked on, and lots and lots of support staff. The building is one of the largest, if not the largest building on campus. It will be a huge campus improvement upon completion.

What we are concerned with is stocking our shelves. We are asking for donations to purchase books, audiovisuals as well as support equipment such as microfilm readers, computer software, microcomputers, etc.

We feel many of you will see the need for a "state-of-the-art" Library. Remember back to when you used the Library? Help us improve; this is a worthwhile cause. You may donate books to the department from which you graduated, or you may donate your own used tests, manuals and current periodicals. Your company may have books, computer software, manuals or equipment to donate in your name and their name. Of course, monetary donations are acceptable. Remember, all types of donations are tax deductible.

**New Grad Report:**

Congratulations and "Best of Luck" to the following graduates who have secured positions since last publication:

- Terence Bensies
- Christopher Norton
- Joseph C. Rutter
- Joseph P. Carrera
- Brian Stewart
- Brian E. Smith
- Linda Leed
- Henry E. Noah
- Jerry Gruen
- Dennis Pelletier
- Don Stewart
- Tawatchai Sainoala
- P. Ramamurthy

BS-Chem. Eng. | BS-Arts, Mgmt.
BS-Agr. Sci. | BS-Econ. Eng.
BS-Bio. Eng. | BS-Cont. Ocean
Ph.D. | BS-Chem. Eng.

**Steady progress**

Doctoral student Evans Library, to open in the spring, is continuing at a steady pace. Pictured below is the new structure, being built beside the Link Engineering Building, as it appears to a viewer atop Crabwell Science Building. The diamond-shaped extension at the new structure is to become a teaching auditorium and a computer center.

**PLAN FOR ALUMNI WEEKEND!**

(Tentative Schedule)

FRIDAY, FEBRUARY 17, 1984
- Engineering Day
- Alumni Student Barbecue Dinner in Classroom Quad
- Alumni Check-In
- Student Homecoming Dance (alumni invited to attend)

SATURDAY, FEBRUARY 18, 1984
- Aviation Management Symposium
- Alumni/Admissions Recruiting Workshop
- Alumni Association Annual Meeting and Luncheon
- Traditional Alumni Crew Races
- Annual Alumni Banquet with theme dinner
- Alumni Casino Night
- F.I.T. Baseball Team vs. Florida Atlantic University
- Intramural games (sports equipment available)

SUNDAY, FEBRUARY 19, 1984
- Alumni Champagne Brunch
- *All events subject to change.*

For further information, write or call the Alumni Affairs office, 150 W. University Blvd., Melbourne, FL 32901 (305) 723-3761, ext. 261.
Environment is Topic

Continued from page one

Preservation of a hardwood hammock or forest area along Turkey Creek is a major goal of the comprehensive plan adopted by Palm Bay in 1983, as was also recommended in Barile's thesis.

There were all kinds of reasons that came out in the study that said the hammock was an extraordinary place, Barile notes. Among them was its utility for storing water during flood periods, and for maintaining clean water.

About 100 acres of wilderness in all, the hammock stretched through Palm Bay to southern neighbors Malabar. It was everybody's 'secret place.' everybody had their own way in, and everybody thought it was their own.

Fishermen had secret trails and youngsters had hidden tree forts and swimming holes. Comrades-oldest was being displaced by off-road vehicles. Native plants were being pushed out by exotics.

Erosion triggered by visitors' footprints was taking a heavy toll on the high sand-bluffs along the creek. (Old-timers recall when the bluff line was the domain of panthers, bold enough to stalk fish-laden boats moving along the waterway.)

In the mid-70's General Development dredged 27 prime acres of the hammock to the Florida Audubon Society. The transfer occurred as the company sought to annex the area to build its lock and dam. Barile was made a member of a caretaker committee. (Another piece of the hammock is owned by the city. That 40-acre recreation area is adjacent to the Audubon land.)"It took more than just fencing the area off. It took an awareness of just how vulnerable the area is," Barile said of the committee's work. Barile and others got into the habit of one-on-one discussions with people damaging the area.

The community saw there was very little good happening, and a lot of bad. A joining of hands in defense of the hammock began, involving individual citizens and businesses as well as groups ranging from native plant buffs to Scouts and garden clubs.

In 1980 the group overseeing the area became an expanded Turkey Creek Sanctuary Committee, incorporated to act as an advisory board to Palm Bay as well as to Audubon. Representation now includes General Development and Barita Corp.

Plans have been made for creation of a Turkey Creek Sanctuary Park under city sponsorship and with state funding. Opening the hammock to citizen uses ranging from exercise paths to nature study sites.

A Turkey Creek Day is sponsored by the city as part of the effort to rally the community, and Gov. Bob Graham dropped by to commend the effort. A second annual installation of that event was held this year.

Barile has also guided a city program to gain acceptance of measures to protect mangroves in Turkey Creek. The bulk of aquatic animals are so anachronistic that there is some sense to people calling them sea cows and mermaids.

Three F.I.T. graduate students aided by Barile identified nearly 400 species of rare animals wintering in the creek. Prior to that work, there existed scientific records of the federally-protected creatures in the water.

The committee is also encouraging developers with property along the waterway to leave natural buffers.

"The incredible thing is that so many people with such diverse views have gotten together on this project," said Barile. "As a scientist, your duty is to pursue the study wherever it takes you. You have to hope the total outcome is something most people want... because without support you just can't do anything at all."

Small things like bumper stickers and posters can help spark environmental interest. Barile even created a game that simulates political processes related to environmental matters. Players across the country have tried their hand at planning Barile's make-believe community.

There is also a cartoon book entitled, "Man Meets Coast," written by Barile in 1980 under a Florida Sea Grant contract with F.I.T.

Barile managed to boil 300 pages of scientific findings down to 30 illustrated pages. She has no doubt about which one will attract the most readers.

Story by Michael Moore

---

Graduates tell "fish farm" story

Continued from page one

Water is pumped into a long, narrow trough, the raceway, and discarded at the other. The aquacell at The Land is experimental: Various aquacultural organisms are raised in it, including grass carps, goldfish, and a variety of aquatic plants.

"The entire system uses about 30,000 gallons of water," said Andrew. He noted that the Disney aquacell consists of four raceways and six exhibit aquariums called 'aquatic-panes.'

Andrew explained that unlike industry's raceways where fish are raised in separate raceways and goes to a life support building where it is cleaned, and then pumped back again to the raceways.

He said that the aquacell is bathed in red light because some scientific studies suggest that it creates a less stressful environment for the fish. Lower stress is believed to help increase their growth and reproduction.

E vans assists Andrew in monitoring water quality and temperatures, dissolved oxygen rates, and food intake of aquatic organisms raised in the aquacell.

She explained that the aquatic organisms require constant attention, since any contaminants in the water or disorders among the fish could affect the entire population.

Both aquaculturalists believe that large corporations could one day dominate the business, since such enterprises require large initial investments and offer no quick profit.

"It is like a garden, you put a lot of money and a lot of work into it," said Evans. "I do not think you will see the emergence of backyard aquaculture in this country," said Andrew.

As for their future plans, Evans hopes to start her own family run aquaculture business in Pinson, Florida. She already envisions some 15 acres of ponds on family property there yielding an estimated 10,000 pounds of fish.

Andrew's long-range goals include working for a governmental aquaculture project at the forefront of developing high protein (good fish). It is the same path other better food sources that agriculture has taken over the last 40 years, he noted.

---

Long View

Mike Andrews examines an "aquatic tube" that provides growing habitat for aquatic life at a EPCOT exhibit. 

On Turkey Creek

Diane Barile and son Peter. P.O. Box 1150
Melbourne, Florida 32901

F.I.T. offers one of the nation's few bachelor degree programs in environmental science that allows students to gain "hands-on" experience in growing a variety of aquatic organisms.

"The aquaculture program we offer here is completely unique in the U.S.," said Dr. Michael Hartman, head of the Natural Sciences and Aquaculture Department at the Jensen Beach campus.

Hartman explained that aquaculture involves the farming or rearing of aquatic organisms ranging from plants such as kelp and algae to fish such as trout, catfish and crayfish — the principal aquaculture crops in the U.S.

"Our students study several aquatic organisms we raise here including everything from tilapia (an exotic fish from Africa), to freshwater shrimp, and crayfish," said Hartman. The aquaculture facility at F.I.T.'s Jensen Beach campus includes a half-dozen 3,000 gallon tanks and several smaller "aquatic pans," as concrete aquaculture tanks are called.

Story by Mary Drew
The capability of F.I.T.'s Academic Computer Center, which serves both students and faculty, has doubled for the new academic year. There is more computer power available, and there is an expanded center to hold more terminals.

There are also such niceties as the computer's new ability to assign terminals to users on a first-come, first-served basis.

The changes, guided by an Academic Computing Committee, were a response to the growth in demand for computer access. A computer science division that handles the work of the students and faculty was added, and its staff must be responsive to more than 3,000 users. Most are students who travel to the center to do programming assignments. The heavily used VAX 11/780 computer now sports 41 terminals at the center, compared to 26 over the past year.

In addition, there are two VAX terminals plus microcomputers in a faculty-use room at the center. All academic departments also have their own terminals that tie into the VAX, and faculty members as well as graduate students have the option of talking with the computer from home through the use of "dumb" terminals.

The VAX handles the major portion of academic computing activity. It is a primary tool of programming and is a critical part of programming instructions to major computer languages. The languages it can hold range from COBOL and FORTRAN to Pascal and APL.

That machine's memory — which dictates the capabilities of the VAX — was doubled during the summer (from four to eight megabytes, which is the ability to store eight million characters of information) in the "dumb terminals" adjacent to the VAX terminal room, a different set of 10 terminals tied into a PDP 11/34 computer (which like the VAX is a product of the Digital Equipment Corporation). That machine is used for teaching "BASIC" computer programming. Also in the room are terminals dedicated to computer graphics, and two VAX terminals for use by reservation.

For报仇: the duties of the center's staff are multiple, ranging from monitoring of computers' internal activities to the writing of programs that make the machines more responsive to the diverse F.I.T. needs.

Staff members include John Adams, Kevin Hester, Mike Newell and Allan Brodersen. A bevy of student workers handle routine operations in the terminal room, and offer assistance to struggling programmers.

One example of ongoing work is the center's capability to offer same-day grading of placement tests given to incoming freshmen, and to provide recommendations on classes to which students should be assigned.

The Exxon gift will aid air lab

Dr. Arthur A. Kimball, director of the Florida-Colorado Institute for Environmental Science and Engineering, has announced the opening of a new office at the university's combined Patrick Air Force Base-Kennedy Space Center site. The new offices are located at the NASA Headquarters Building at KSC.

Jackie Lorick coordinator for Veterans Affairs was the recent recipient of the National Association of Veteran Programs Administrators (NAVPA) 'President's Award.' NAVPA is comprised of administrators of Veterans Programs from colleges and universities nationwide. The award was presented to Lorick by NAVPA president Marvin Peterson in recognition of "outstanding service" to the organization at a NAVPA conference held in Honolulu, Hawaii. Lorick was also elected treasurer of NAVPA at the conference. She currently serves on the Board of Directors of the national organization.

Of special interest to F.I.T. researchers, he explained, is sulfur that is released into the air by plants and soil bacteria. Sulfur put in the air as a byproduct of human activities has received major study as a cause of acid rain. But Stephens termed the natural release "an unknown factor but possibly a significant one in this part of the country."

Exxon Company gave F.I.T. a sophisticated automatic atmospheric sulfur analyzer, a calibration unit, and a recorder, said Stephens.
**New computer education program will benefit teachers**

With more than 6,000 microcomputers currently in use for instruction in Florida elementary and high schools, F.I.T. is tackling a leadership role in training teachers to use these computers.

As of the Winter Quarter, the Science Education Department will be among the few university programs in the state to offer a master's degree program in computer education.

The degree program is aimed at high school and elementary school teachers with a wide variety of teaching backgrounds,” says Dr. Robert H. Fronk, head of Science Education. "Many of these teachers hold college degrees in history or English, have a strong desire to learn more about microcomputers, but lack the prerequisite undergraduate science and math courses necessary for admission into a graduate-level program in computer science," said Fronk.

"We hope the teachers we train through this new degree program will return to their schools and help lay the groundwork for the individual use of microcomputers into their schools," he added.

Persons seeking admission into the new program must have a bachelor's degree and be proficient in college Algebra and "BASIC" the most widely used computer and programming language in elementary and secondary schools.

The degree program will be taught cooperatively by faculty members from Computer Science and Education. Persons enrolled in the program will take specialized courses in several computer languages including advanced BASIC, PASCAL, LOGO and PILOT.

Fronk said that state law already requires students to take computer courses in order to earn a high school diploma, and state lawmakers are currently in the process of developing new certification requirements emphasizing computer literacy for secondary school teachers.

**Who's Who honours F.I.T. students**

The names of 25 F.I.T. students studying at the Melbourne campus who have been inducted into the 1984-1985 Who's Who Among American College and University Students were announced by college officials.

The students selected are among persons honored from 1,500 colleges and universities in the U.S. and several other nations. According to an announcement from the director of the annual publication, headquarters at Tuscaloosa, AL, was first published in 1934.

Selection is based on academic achievement, leadership in co-curricular activities, and potential for continued success. Campus nominating committees submit written candidates for review by directory editors.

Students honored by Who's Who include:

- JoAnn Maria Allen, ocean engineering, West Orange, IL; Scott: Jason Barbenic, height technology, Newto:

**test will find causes of genetic change**

A contract with IBM in allowing F.I.T. researchers to unravel mysteries surrounding genetic changes in living cells. The work is aimed at further development of a test system to detect chemical compounds that are potentially hazardous to human health.

Dr. John C. Haisler, director of the Medical Genetics Laboratory, was awarded a $50,000 contract with IBM Corp. for a one-year study. Preliminary work to develop the test system was supported by a $245,000 contract from the Environmental Protection Agency.

The test system currently under development involves scrutiny of mouse cells grown in the laboratory, and the ability of chemicals to alter the biochemistry of these cells by changing their DNA.

Haisler explained that the test system is able to measure the exchange of genetic material between different chromosomes. Chromosomes are the microscopic, thread-like shaped bodies containing the DNA and are found in the cell nucleus. The exchange process (or crossing over) is necessary for the survival of higher organisms.

"Many of the agents which damage chromosomes. Such events can result in human disorders such as cancer or birth defects."

The IBM contract will support efforts to isolate and reproduce " or "clone" — many copies of specified genes, the major nucleic acid gene. That will allow changes in the chromosomes to be examined at the molecular level, and make the results from animal cell studies more indicative of the effects involved in human exposure to potentially hazardous chemicals.

Haisler in the study will be co-investigators Dr. Kenneth L. Kasoeck, associate professor in Biological Science, and Dr. Michael C. Soden, and post-doctoral fellow Masahiro Appligata.

Story by Mary Dees

**Bible is gift**

An antique Hebrew Bible was recently a personal donation to F.I.T. from Patricia and Jack Scott. He is chairman of the board of the Community Foundation of the Big Bend. The Bible is on display and used in special religious ceremonies on campus.

The book, published in 1730 in Lubeck, Germany, according to Nancy Harnan, special assistant to F.I.T. President Jerome J. Keiper. The 2,000-page text of the Bible is in German, and it features wood illustrations.

He wanted to donate it to F.I.T. because it would be "a home to for someone," said Scott. The Scotts live in Cocoa Beach. He said the Bible has great sentimental value, since it was his wife's family for years.

Scott said he believed that the gift would also complement F.I.T.'s extensive holdings in "All Faith Religious Center," said to acquire $4 million worth of new books for the expanded library that is being built.

**Robot fixers**

Electronics student David Phillips and Jorge Jarrold, left, and out of a "HERC "robot, part of the equipment being used in the robotics technology degree program recently began at the Jensen Beach campus.

**Robots arrive at Jensen Beach**

Degree programs in robotics technology have been initiated at the Jensen Beach campus, according to Dr. William Gehring, dean of academics for F.I.T. There.

"We are now on the dawn of the robot revolution," Gehring said. "Robots are entering the work place in large numbers and changing the job market in most of the world's industrialized nations."

"Presently robots perform simple repetitive mechanical tasks which require accuracy or strength that human beings find difficult or dangerous to match," Gehring continued.

"The future holds far more sophisticated robots. Robots will be found in research, industry, health care, education and home maintenance. Robots will be capable of more varied tasks, and they will be better able to perform human functions such as seeing, walking, discriminating and talking. Robots will be part of our daily lives," said Gehring.

F.I.T. developed its new program with the cooperation of major robotics manufacturers, and industrial users of robotics systems.

"The robotics program will give students the applied courses necessary to participate in this dynamic revolution," said Leo Hans, the department head.

"The curriculum includes relevant coursework in both software and hardware which will allow students to become technicians in robotics and technologists involved in the installation, maintenance and modification of industrial robots," he said.

Students can choose either the two-year associate degree program or the four-year bachelor of science curriculum.