THE THIRD ANNUAL FLORIDA EXTRAVAGANZA:
A UNIQUE WINE, SPIRITS & CULINARY CELEBRATION

DATE: Sunday, January 17, 1999
TIME: General Tasting from 4 to 8 pm, Live Auction from 5:30 to 6:30 pm
SPONSORED BY: Southern Wine & Spirits • The Wine Spectator
• The School of Hospitality Management at FIU
PLACE: Roz and Cal Kovens Conference Center, FIU North Campus,
NE 151st Street & Biscayne Boulevard, North Miami, Florida 33181

The Third Annual Florida Extravaganza continues to be the largest wine tasting event in South Florida's history with more than 100 vineyard owners, manufacturers and winemakers. Internationally-known chefs Norman Van Aken, Mark Militello, and Allen Susser have assembled 50 of South Florida's premier chefs for an epicurean experience you are not likely to forget.

We have increased our space again this year to accommodate the growing interest in the event.

Benefitting: All proceeds will benefit the School's Beverage Management Studies Endowment and FIU's Southern Wine & Spirits Beverage Management Center.

Tickets/Information: Michelle Oney, School of Hospitality Management at FIU
305-919-5333
Naphtali Rishe's elegant approach to programming .......................... 10

The personal and professional journey of Naphtali Rishe, director of the High Performance Data Research Center, led to the establishment of a cutting-edge computer research center at FIU.

Developing the virtual library .............................. 12

Reflecting sweeping changes in the storage and delivery of data, the FIU Libraries are now incorporating the latest electronic technologies to provide access to information at the University or from points throughout the world.

Technology for the top ....................... 14

Through the plan "Technology for the Top," FIU is transforming the way computers, networks, and new digital technologies are used for teaching and administration.

To Life! FIU research paves the way for medical breakthroughs ............ 15

Health-related research, a growing area at FIU, reflects the designation of health as one of the University's priority academic strategic themes. Three "snapshots" of current projects represent the state-of-the-art research being conducted in this area.

Melanie Green: Standing for something ........................................ 22

Alumna Melanie Green, named the 1998 Miami-Dade County Teacher of the Year, draws from her life experiences — ranging from "problem child" to "mom from hell" — to motivate her students to reach their maximum potential.

Born to Die ........................................ 24

An excerpt from History Professor Noble David Cook's book, which recounts the waves of diseases that Europeans brought to the New World and their deadly consequences for peoples of the Americas.

Cesar Becerra motors into the millennium .................................. 28

Between 1999-2000, FIU alumnus Cesar Becerra and his wife will travel throughout all 50 U.S. states to take the pulse of the American spirit and psyche.

Editor's Note

It doesn't take a rocket scientist to figure out that FIU isn't what it used to be. But if it continues on its current track, it will be turning out scores of tomorrow's rocket scientists (among other researchers).

For years, FIU has been well known around South Florida as the place to go for outstanding, affordable higher education. Meanwhile, away from the classrooms, another side of the University has been quietly and consistently growing: its research enterprise.

Research is one of the key elements of FIU's mission, and over the past decade the faculty have attracted rapidly increasing external support. When he assumed the helm of FIU in 1986, President Modique advanced research as a top priority, and in the past 10 years research funding has increased more than five-fold. Under the leadership of Tom Breslin, FIU’s first vice president of research and graduate studies, and with the assistance of a new universitywide task force, the drive to Research I classification — the top echelon of the nation’s research universities — will be accelerated.

The establishment of a top public research university in Miami will provide countless new opportunities for students while it enhances the region's economic development and overall quality of life. It also will facilitate the discovery of new knowledge that can benefit people everywhere. In this issue of FIU Magazine, several stories illustrate the exciting cutting-edge research now taking place at the University — a harbinger of the FIU of the 21st century.

Todd Ellenberg
Editor
IN BRIEF

BRESLIN NAMED FIRST VP FOR RESEARCH & GRADUATE STUDIES

Following a national search that brought six finalists to campus, Thomas A. Breslin has been named FIU’s first vice president for research and graduate studies. In this new position, Breslin reports to the provost and joins other University officers as a member of the Executive Council.

“Dr. Breslin’s appointment stands in recognition of his outstanding leadership in the development of a nationally competitive research profile for FIU, support for his candidacy throughout the University, and his ability to propel FIU into the ranks of leading research universities in the United States,” said FIU President Modesto A. Maidique. “As a result of this search, we are convinced that Dr. Breslin has the vision and entrepreneurial skills to help us reach our goal of a Carnegie Research I university.”

Breslin came to FIU in 1977, initially serving as associate dean of the University’s International Affairs Center. In 1982, he began spearheading the University’s efforts to attract external research support when he became director of the Division of Sponsored Research and Training. He was named a vice provost in 1988, and in 1996 began serving as acting vice president of research and graduate studies. Under his leadership, annual contract and grant income to the University has increased more than ten-fold.

“I look forward to working with the University community for many more years to advance our research programs and achieve our goal of Research I status,” Breslin said. “I would particularly like to thank my colleagues in Sponsored Research for all they’ve done to help attract increasing levels of grant and contract support.”

SPONSORED RESEARCH TOPS $37 MILLION FOR 1997-98

On the heels of four previous record years, 1997-98 was another phenomenal year for FIU’s sponsored research and contract funding: $37 million was raised, up 22.5 percent from $30 million the previous year. In the past 10 years, sponsored research and contract funding has increased more than 500 percent. The Division of Sponsored Research and Training provided an analysis of where FIU now stands — and where it’s headed — in this area.

In fiscal year 1996, FIU ranked #139 in total federal grants among public colleges and universities. It is estimated that with this year’s $27-$28 million, FIU will move up to around #110 and that within two years, the University will be in the top 90.

According to National Science Foundation data, in fiscal year 1996, FIU ranked #190 in science engineering R & D expenditures, increasing 47.3 percent over 1993; prior to that, FIU was not ranked in the top 200. It is anticipated that FIU is about #160 this year. A major jump is anticipated for next year; proposal value is running 40 percent ahead of the same time last year. In two years, it is expected that FIU will be #150.

FIU ranked #98 in overall R & D expenditures in the social sciences and #58 in federal funding in the social sciences, second highest in Florida (and only about $120,000 behind Princeton). It is anticipated that FIU will pass #40 MIT in two years.

FIU ranked #76 in federally financed R & D expenditures in engineering, third in the SUS. It is expected that FIU will move up to at least #70 in two years, passing Columbia.

One of the major factors behind the University’s increasing contract and grant success is the growing number of individuals receiving major awards. In 1997-98, 30 members of the faculty and staff received more than $250,000, and five were awarded more than $1 million — the FIU “millionaires.”

FIU RECEIVES HIGH MARKS IN NATIONAL GUIDES

University ranked as nation’s 18th top value

FIU is among the top 20 best values in U.S. public higher education, according to a survey in the September issue of Kiplinger’s Personal Finance Magazine. The University was ranked 18th overall and was named one of the lowest-cost schools and best values for out-of-state students.

This year for the first time, Kiplinger’s ranked 100 public universities — out of a total 1,813 institutions around the country — using quality and financial criteria such as selectivity, graduation rates, class size, computer and library resources, cost of tuition, financial aid and debt of graduates.

“Kiplinger’s ranking confirms our belief that FIU is a smart choice given our high quality and affordability,” said FIU President Modesto A. Maidique. “The value of an FIU education is no secret to anyone familiar with the teaching and research being conducted at the University.”
According to the 1997-98 data collected by Kiplinger’s, FIU’s total in-state costs, including room and board, are $6,924 and $13,578 for out-of-state.

In 1996, FIU ranked among the top commuter colleges in a Money magazine survey based on similar criteria. In addition, for the past three years, U.S. News & World Report magazine ranked FIU among the top 100 public national universities in its annual survey of “America’s Best Colleges.”

University of Florida was the only other Florida institution ranked among the top 20 in the Kiplinger’s survey.

U.S. News reports FIU graduates incur the least debt

FIU students graduate with the least amount of debt in the country, according to a U.S. News & World Report survey released in August.

“This ranking is indicative of the low tuition cost and generous financial aid packages we offer our students,” said FIU President Modesto A. Maidique. “Our university has grown in academic stature and excellence while our tuition and other costs have remained extraordinarily low.”

In the 1999 “America’s Best Colleges” survey, U.S. News compiled a list of the institutions whose 1997 graduates carried the heaviest and lightest average debt loads. The data included loans taken out by students from colleges, financial institutions, and federal, state and local government. Loans taken out in parents’ names were not included.

FIU graduates’ average debt was $4,500. The fact that many FIU students carry full- or part-time jobs also contributes to their low debt.

FIU is the only Florida college on the least debt list. Nova Southeastern University topped the Most Debt list — with $26,345 on the average.

U.S. News also ranked FIU among the most ethnically diverse colleges in the country.

FIU students among best in nation on CPA exam

The National CPA Examination Report recently revealed that FIU students are second in the nation in passing the Certified Public Accountant exam.

“FIU appears in the top ten for three consecutive years,” said James H. Scheiner, director of FIU’s School of Accounting. “These results are indicative of our standard of excellence and the challenging curriculum used to prepare students for a successful career.”

The National CPA Examination is conducted in May and November each year. The standardized exam is administered throughout the nation as a part of the criteria used to become licensed in the field.

REGENTS APPROVE LAW SCHOOL FOR MASTER PLAN

Last summer, the Florida Board of Regents (BOR) approved 32 new degree programs for FIU’s 1998-2003 master plan: 10 baccalaureate programs, 17 master’s programs, and five doctoral programs — including one for a law school.

The decision gives FIU the green light to work with a BOR planning committee on an in-depth study to assess the need for a public law school in South Florida and the job the state is doing to attract and retain minority law students and lawyers.

“This means that FIU may soon be in a position to educate the next generation of professionals in the legal field, an issue which is critical in the development and competitive-nature's way?

“We've got 100 cities on barrier islands that are on a collision course with nature,” said Stephen Leatherman, director of the International Hurricane Center and popularly known as “Dr. Beach” for his annual ratings of America’s best beaches.

“You can say those environments are dynamic and shifting and not very suitable for development, but what are you going to do? Let Atlantic City or Miami Beach wash away? It’s not realistic. In 1979, when Miami’s beach was wasting away, you were looking at the development of a waterfront slum. Now the beach is back, and it’s paid for itself 100 times over.” —From The New York Times, July 11
It defies logic — are they going for the Guinness Book of Records?” asked Ivelaw Griffith, professor of Political Science, about the movement on the Caribbean island of Nevis to split from its current union with neighboring St. Kitts. “The two islands are already the smallest country in the Americas (population 45,000) and an independent Nevis would be the smallest nation in the Western Hemisphere.”

Ivelaw Griffith

Tiny autonomy

“...the people of South Florida are closer to their dream of having access to quality legal education at an affordable price,” said FIU President Modesto A. Maidique. “The addition of a law school will help solidify FIU as the model for the urban, international university of the 21st century.”

James A. Mau

PROVOST MAU LEAVES FIU TO BECOME SUS VICE CHANCELLOR

Provost and Vice President for Academic Affairs James Mau, who was with FIU for 20 years, was appointed vice chancellor for academic programs for the State University System of Florida (SUS) last spring.

“Over the past 20 years, Jim has demonstrated repeatedly that he is one of Florida’s most able scholars, intellectual leaders and academic officers,” said SUS Chancellor Adam Herbert. “Dr. Mau’s extensive experience and the perspectives he brings from the campus setting will serve our system and Florida very well.”

Mau came to FIU in 1978 to become the University’s second dean of the College of Arts and Sciences, and he has served as provost the past eight years. Prior to FIU, he was associate dean of the Graduate School and professor of Sociology at Yale University.

“While we will sorely miss Jim’s wisdom and leadership, this is a great honor for one of our own and we wish Jim the best in his new role,” said FIU President Modesto A. Maidique. “We take comfort in that Jim expects to return to FIU after his tour of duty with the SUS, which will likely be two to four years. Jim will be on leave as a professor of Sociology while he is on this assignment.”

“...cited FIU’s Diversity Initiative Program as a ‘Promising Practice.’”

The White House has recognized FIU’s Diversity Initiative Program as a “Promising Practice.”

“Florida International University is a wonderfully diverse place and we are very pleased that the White House has recognized our efforts,” said President Modesto A. Maidique. “In the last few years we have worked hard to foster respect and understanding, which will only help

WHITE HOUSE CITES DIVERSITY INITIATIVE AS ‘PROMISING PRACTICE’

Promising Practices are community-based and national efforts around the country that are designed to improve race relations. The efforts advance President Clinton’s vision of a stronger, more just and more unified country.

Herbert, the president of the University of North Florida who once served as vice president at FIU, became the chancellor of the State University System earlier this year.

Mark Rosenberg, vice provost of International Studies, was appointed provost and vice president of Academic Affairs for an interim period of one year while the University seeks a permanent replacement for Mau. Arthur Herriott, dean of Arts and Sciences, is chairing a national search to identify and appoint a new provost.
to strengthen our community.”

President Maidique established the Diversity Initiative Program in 1995 under the leadership of Vice President of Business and Finance Cynthia Curry. The Diversity Initiative Program includes numerous workshops, forums, lectures and publications. FIU’s strategic plan, “Reaching For The Top,” has identified diversity as a strategic theme.

FIU’s student body is approximately 50 percent Hispanic, 25 percent white, non-Hispanic, 15 percent black, and 10 percent Asian, foreign students and others. In its campus diversity rankings published in the 1998 “America’s Best Colleges” guide, U.S. News & World Report ranked FIU 15th among national universities. It received a diversity index rating of 0.60 (out of a maximum of 1.0); the highest index rating was 0.71.

FIU is featured in the White House’s Promising Practices web site. Visit the site at: www.whitehouse.gov/lnitiatives/OneAmerica/OneAmerica_Links.html

GOODBYE TAAC, HELLO SUN BELT
Golden Panthers switch athletic conferences

In a move that reflects the growing strength and recognition of FIU’s intercollegiate athletic programs, the University switched its affiliation from the Trans America Athletic Conference (TAAC) to the Sun Belt Conference.

FIU, a member of the TAAC since 1990, began competing in the Sun Belt Conference in the fall. Fourteen of the University’s 17 sports programs compete in the conference; the Sun Belt does not compete as a conference in men’s and women’s soccer and softball.

“Joining the Sun Belt Conference is a major step forward for FIU’s athletic programs,” said FIU President Modesto A. Maidique. “We are proud to join hands with a strong group of institutions who are leaders on both academic and athletic fields.”

FIU’s addition brings the 22-year-old conference’s membership to eight institutions: FIU, University of Arkansas at Little Rock, Arkansas State University, Louisiana Tech University, University of New Orleans, University of South Alabama, University of Southwestern Louisiana and Western Kentucky University.

“A large, urban university such as FIU fits the profile of a Sun Belt institution quite well,” said Sun Belt Commissioner Craig Thompson.

“Its academic and athletic growth are both very appealing. The success of FIU’s men’s and women’s basketball programs, as well as baseball, is very exciting.”

The Sun Belt usually fields stronger teams than the TAAC, particularly in women’s basketball and baseball — which will bring greater recognition and exposure as well as better recruiting. It means greater respect from selection committees who choose teams for NCAA playoffs. There’s also a financial plus; Sun Belt teams keep 25 percent of all NCAA revenue they generate (with the remainder going to the conference), while TAAC teams share equally.

SCHOOL OF ARCHITECTURE LAUNCHES DESIGN COMPETITION FOR BUILDING

The construction of a new building for a school of architecture is a rare happening in the world of architecture, an opportunity to showcase the finest in the field. So when state funding was secured to construct a building for FIU’s School of Architecture, it was decided to hold an open competition for the structure’s design.

The University anticipates the call for proposals for the initial design phase of the building to capture the interest of renowned architects around the world. Architecture

“...”

Racial obsession

“The United States has simply become obsessed with issues of race,” said Darden Asbury Pyron, professor of History, commenting on controversy surrounding last summer’s theatrical rerelease of Gone With the Wind. Pyron wrote a book on Gone With the Wind and a biography of the novel’s author, Margaret Mitchell.

“I really don’t think the majority of folks see it in racial terms.”

—From The (New Orleans) Times-Picayune, July 5
Some ways not only facing the architect and engineer Cuban exiles, including a foundation. It shows Cuba and all of a sudden—From the National Foundation is the foundation has been out there," said Damian Fernandez, professor of International Relations, commenting on the indictment of seven Cuban exiles, including a foundation director, for allegedly conspiring to murder Fidel Castro.

"The perception is one that is very damaging to the foundation. It shows an institution that is in some ways not only facing a storm but is rudderless in facing the storm. For the past 10 to 15 years, the foundation has been the architect and engineer of U.S. policy toward Cuba and all of a sudden they are walking a very murky line in terms of their legality."

—from the St. Petersburg Times, August 26

Dean William McMinn expects to have the new building, which has a $16 million budget, completed within the next three years.

"This structure will be a major piece of architecture that will enhance FIU's image of academic excellence worldwide. It will be the 'gem' of the FIU University Park landscape" said McMinn. "We want the new School of Architecture building to reflect the school’s architectural education and philosophy."

Submissions to the School of Architecture were due in early November. Based on the entries, eight architectural firms were invited to campus for interviews in early December. The field of architects was then narrowed down to four, who will make final presentations in March, shortly before the winning design is selected. The building is expected to be completed by January 2001.

"Designing a school of architecture is a rare and prestigious opportunity for architects that only comes around once in a lifetime," said McMinn.

The new School of Architecture building will be located near the University Park main entrance on Southwest Eighth Street and 112 Avenue, across from the College of Education building.

STUDY Examines SCHOOL TOBACCO PREVENTION PROGRAMS

It's common knowledge that tobacco use is associated with the leading causes of sickness and death. Nevertheless, tobacco use is on the rise among students in middle schools and high schools despite the tobacco prevention programs in place in the overwhelming majority of Florida public schools.

It has been revealed that only about 10 hours annually is devoted to tobacco education and that teachers responsible for substance use prevention receive little or no special preparation to assist them in presenting these programs.

These were just two of the findings of an FIU study of tobacco prevention programs in Florida's public middle and high schools. This research was one of the studies sponsored by the Kid's Campaign Against Tobacco Pilot Program directed by the governor's office and funded by the state Department of Health. The $221,878 project was supervised by principal investigator Lilly Langer, associate professor of Sociology/Anthropology, and co-investigator Jonathan Tubman, associate professor of Psychology, and their colleagues in the FIU Center for Youth Development. The FIU Institute for Public Opinion Research conducted the telephone surveys to collect the data, and George J. Warheit, the retired chair of the Department of Sociology at University of Miami, also served as a co-investigator.

The study was designed to secure base line data on: tobacco use prevention programs in Florida’s middle and high schools, as well as the content and characteristics of these programs; the educational background and training of those teaching prevention programs; and barriers which limit the effective implementation of programs.

The increased use of tobacco products by young people has been a source of growing concern in recent years. A recent survey conducted under the aegis of the Florida Department of Health in March revealed that 38.6 percent of the males and 36 percent of the females in Florida's high schools had used tobacco in the past month.

The data collected by the FIU team was from a sample of 383 principals and 578 teachers throughout the state. Key findings include:

- Almost all of the schools surveyed have mandatory substance use and tobacco prevention programs as part of their curriculum. A very large percentage of the programs, however, are not routinely evaluated for their effectiveness.
- The vast majority of teachers responsible for these programs have received little or no special preparation to assist them.
- Only about 10 hours annually are devoted to tobacco education.

On average, high school students receive about seven hours a year and middle school students about 12 hours.

- Teachers report strong support for their efforts from administrators, principals and fellow teachers, but fewer teachers report support from students, parents and the community. Only a small minority of teachers report that students are very interested in anti-tobacco lessons.
Almost all teachers and a very large percentage of the principals indicated that school programs were not very effective in preventing the use of tobacco or assisting those attempting to quit.

Based on the study’s findings, the report concludes that “a great deal more emphasis must be given to prevention/cessation programs in Florida’s public schools and, further, that many more resources are needed if these programs are to be successful.” In addition, the programs must be evaluated regularly to determine their impact on student behaviors.

At the conclusion of this project, Langer and co-investigator Mark Watts, associate director of the FIU Institute for Public Opinion Research, were awarded an additional contract to construct a database of private schools in the state. This data will enable private schools to include in future Tobacco Pilot Project interventions.

Langer hopes to launch a second phase of the research, which would extend previous prevention and cessation efforts. The state has committed $70 million in total funding to the pilot project and $4 million to evaluation research, which is slated to run through summer 1999. As a result of the tobacco industry’s payout to settle the lawsuit filed against it by the state, during the next 25 years the state will have $111.4 billion to spend on social programs, including many that target youths.

“I’m very interested in how young people make decisions, especially those concerning their health,” Langer said. “I hope that FIU’s Center for Youth Development will continue to be associated with programs that remediate some of the social problems associated with youth in our society.”

**SPANISH PRIME MINISTER RECEIVES HONORARY DOCTORATE**

José María Aznar, the prime minister of Spain, visited FIU last June to deliver a lecture and receive an honorary doctorate. Seen at the commencement ceremony, held at the Wertheim Performing Arts Center, are (from left) former Provost James A. Mau, Prime Minister Aznar, Board of Regents Chair Steven Uihlein and FIU President Maidique.

**DALAI LAMA TO VISIT FIU**

The Dalai Lama Tenzin Gyatso, the head of state and spiritual leader of the Tibetan people, will speak at FIU on April 16, 1999, and be honored with the conferment of an honorary degree. This will be the Dalai Lama’s first visit to Miami.

Born Lhamon Dhondrub in 1935, the Dalai Lama was recognized as age two, in accordance with Tibetan tradition, as the reincarnation of his predecessor the 13th Dalai Lama, and thus an incarnation of Avalokitesvara, the Buddha of compassion. He was enthroned in 1940 in Lhasa, the capital of Tibet.

In 1950, Chinese forces invaded and occupied independent Tibet. After 10 years of ceaseless but unsuccessful efforts to have the Chinese regime recognize the rights of the Tibetan people to live in freedom, in 1959 the Dalai Lama and 80,000 of his followers escaped to India where they were granted political asylum. Today, there are more than 120,000 Tibetans in exile. Since 1960, he has resided in Dharamsala, India, the seat of the Tibetan government-in-exile.

For the past 40 years, the Dalai Lama has mounted an increasingly widespread international campaign to restore a free Tibet and end the systematic repression of China against the Tibetan people. In 1989, in recognition of his struggle for the liberation of Tibet — in which he has consistently opposed the use of violence — the Dalai Lama was awarded the Nobel Peace Prize.

The visit of the Dalai Lama to FIU was arranged by Nathan Katz, chair of the Department of Religious Studies. In 1990, Katz was part of a group of seven rabbis and Jewish scholars invited to meet with the Dalai Lama in Dharamsala, India. The Dalai Lama was interested in learning more about the “Jewish secret” for surviving exile and preserving their religion for 1,900 years without a homeland.

Details about the Dalai Lama’s visit will be announced as they become available.

**Give the people what they want**

“It’s a logical step,” said Lesley Northup, professor of Religious Studies, about the trend among churches to add “praise and worship music” — songs with simple, catchy lyrics and set to a pop or soft rock beat — to their services.

“Churches are looking at the success of these big, nondenominational churches and then they see that attendance at their traditional services is down. So they saw that maybe they need to give people what they like and want.”

—From The Sun-Sentinel, May 24

**Voodoo healing**

“The primary focus of Vodou (voodoo) is healing,” said Terry Rey, professor of African and Caribbean religions, commenting on the use of the traditional religion among Haitians to treat illness.

“The perceptions of it as being destructive are totally incorrect...and without respect for the rationale and theology behind it.”

—The Sun-Sentinel, May 13
The FIU Foundation’s Board of Trustees and University Advancement have expanded the Campaign for FIU and increased its fund-raising goal to $200 million.

The original campaign officially began in 1996 with a target of $65 million. Contributions and pledges totaling more than $140 million have already been raised.

“Extending the campaign just made sense,” said Paul Gallagher, vice president for University Advancement and Student Affairs. “With members of the community and many of our existing donors assisting in our efforts, we are confident of hitting the new mark.”

An important aim of the campaign’s second phase includes raising additional funds to enlarge the university’s endowment. An endowment — money set aside for investment purposes — is one indicator of an institution’s financial health. FIU’s current endowment is $29 million, up from $8 million at the campaign’s start. The investment income makes possible, among other things, student scholarships, certain types of building projects, and items like lab and computer equipment not funded or only partially funded by the state.

“What the new goal boils down to is more resources for faculty and students,” Gallagher said. “Although we’re shooting for a monetary figure, we’re really working toward meeting the specific needs of our growing university in the wake of lagging state support.”

The first such large-scale fund-raising effort of its kind at FIU, the Campaign for FIU is indebted to those who have already contributed.

“Without the early and strong backing of certain individuals and companies, we could never have hoped to increase the goal to $200 million, much less reach the first $65 million,” said FIU President Modesto A. Maidique. “We remain extremely grateful to those who have already made commitments. They are the reason we have decided to go on. They are the ones who encouraged us to work even harder.”

You may not realize it, but the next time you’re at a restaurant ordering a steak, pasta or bottle of wine, your dining experience may be impacted by an FIU-corporate marriage.

Metromedia Restaurant Group (MRG), one of the world’s largest restaurant companies, and the FIU School of Hospitality Management, one of the top five hospitality schools in the U.S., have joined forces in a dynamic hospitality education partnership.

This multifaceted partnership benefits the company, the University, future employees in the hospitality industry, and the community. MRG (an affiliate of the Metromedia Company, one of the largest privately held companies in the United States) is not a household name, but its brands are, including Bennigan's, Ponderosa, Bonanza, and Steak and Ale Restaurants. The company has more than 1,000 restaurants in 43 states and 12 countries, over $1.3 billion in annual sales, and 50,000 employees.

After three decades of innovation and leadership that have placed it at the cutting edge of change in the industry, MRG has set out to include FIU's School of Hospitality Management as a partner in that change.

In June 1996, MRG and the School of Hospitality Management celebrated an historic first. Thanks to a gift from MRG and company chairman John W. Kluge, a $1,020,000 scholarship endowment, the largest of any school at FIU, was established. MRG was attracted to the school by its national ranking and ethnic diversity — a perfect fit for the company's international and domestic market plan. The school's international students and alumni were also attractive due to the company's international expansion, with units slated for the United Arab Emirates, Panama, Costa Rica, Guatemala, Honduras, El Salvador, and Qatar.

“We are pleased to partner with one of the nation’s leading hospitality management schools to encourage and support the pursuit of
restaurant management careers for minority students,” said Michael Kaufman, president of MRG, who presented a lecture to 500 FIU students this past fall. “This partnership makes sense because a significant number of our Bennigan’s, Steak and Ale, and Ponderosa Steakhouse restaurants are located in Florida, providing a valuable training ground for FIU students to serve as interns while they are in school.

“After graduation, the horizon of opportunity broadens to our restaurants throughout the U.S. and internationally. MRG has a responsibility for developing leaders and we are putting our resources into that through this partnership. We are reaching out to a source of future talent for our businesses — it is a logical thing to do.”

The first MRG intern, Maria Fernanda Rivera, a senior who graduates this winter, was selected to work in a Steak and Ale near FIU’s North Campus. The internships are structured to “fast-track” students through all aspects of the company’s existing management training program. At the completion of the internship, students are only required to complete an additional two to four weeks of management training, providing them with a distinct advantage over the typical graduate.

“It’s been an incredible opportunity,” Rivera said, adding that she aspires to open her own restaurant. “The program is very well structured, and I’m learning about operations both in the front and back of the house.”

Over the years, the company has hired numerous graduates for management positions at Steak and Ale and Bennigan’s.

“FIU’s highly acclaimed School of Hospitality Management is known for producing leaders in the hospitality industry, and the school is a top priority for our management recruiters,” said Tom Pharr, vice president, recruiting, of MRG. “We are continually looking for the caliber of talent that comes out of FIU to fill management-level needs. We expect our relationship with FIU to flourish in the coming years through the new Steak and Ale management internship program and the scholarship endowment for minority students at FIU established through Metromedia Restaurant Group and the John W. Kluge Foundation.”

Graduate student H. Dwayne Mackey is the first MRG/Kluge Scholar in the school. Initially an advertising major at the University of Florida, a restaurant internship helped lead to a change in career paths.

“I had always cooked for myself as the son of a single parent, but cooking for others and receiving positive feedback for my efforts is what hooked me,” he explained. “I never received that kind of recognition or feeling of accomplishment in the field of copy writing.”

A subsequent training program at the Biscayne Bay Marriott Hotel and the influence of its sous chef and food production manager encouraged Mackey’s interest in “learning and not just doing.”

“While constantly pushing me, they encouraged me to learn overall food and beverage operations, and to not just limit myself to the kitchen,” he said, noting that he would like to pursue a doctorate and teach hospitality management.

“I did exactly that and discovered the other side of the industry that still has me hooked: interaction with guests and knowing that no two days will ever be the same. In short, the hospitality industry has provided me a means of providing for myself and my family while doing something I love. Isn’t that what everyone is after?”
Naphtali Rishe's 'elegant' approach to programming

Although his English is excellent, the briefest of conversations reveals Rishe's roots. He was born in Saint Petersburg — then known as Leningrad — and spent the first 17 years of his life in the former Soviet Union. From a very early age he was “fascinated” with mathematics, and as an adolescent he attended a high school that specialized in math and computer programming.

"There was just one peculiar thing with that school," he recalled. "The school's computer happened to break before my entrance into the school, and they didn't repair it until after I graduated. So I never had any practical experience — we wrote our programs on paper and the teacher visually verified the correctness of the programs."

Professionally, Rishe dreamed of becoming a computer programmer. On a personal level, he and his family shared another dream: to leave the Soviet Union. In addition to the general repression of the Soviet regime, as Jews they were subjected to an extra measure of ethnic and religious persecution. Ironically, their ethnicity helped them escape their native land.

"In 1974, there was a window of opportunity to leave," he said, "and many wanted to take advantage of it. In the early '70s there was a relaxation of Russian emigration policies where they allowed Jews to leave for humanitarian reasons. Today it is no problem to emigrate from Russia, but at that time it was one of the few privileges Jews had; ethnic Russians could not leave. It was a risk — because if you were granted emigration, you won the Russian roulette; if you were denied, you became even more of a second-class citizen and whatever meager rights you had before would disappear. It was a risk — but a calculated risk that we took."

It wasn't as simple, however, as filling out an application and buying a plane ticket. The gamble involved the KGB.

"There was this game that one was supposed to play with the KGB. You had to present a case that you were emigrating to reunite your family, which was the only legitimate reason for emigration. We didn't have any close relatives in Israel, but we had a completely manufactured "uncle" who wrote

us letters from Israel. 'He' wrote us a few letters, sent us an invitation to move, and sent us an affidavit of support saying that if we came to Israel he would support us until we became economically independent."

"This was a game where all the parties knew the real truth. You couldn’t conceal it from KGB. KGB was playing along, you needed to present this and that, but I am sure they knew our biography better than ourselves. They kept files on everybody. So we applied for emigration, six months down the road they let us go and we went to Israel in 1974."

Rishe said they were warmly welcomed in Israel, and it soon felt like home. Over the next 10 years, he balanced two major priorities in his life: his duty to his adopted country — which, in Israel, meant military service — and
securing his higher education in computer science. From 1979 through 1984, he served in the Israel Defense Forces, serving as a software engineer. He studied for his bachelor’s and master’s degrees at the renowned Israel Institute of Technology (Technion), and received his doctorate from Tel Aviv University.

During the course of his graduate studies, Rishe began developing his semantic database modeling theory, the subject of two subsequent books (published by Prentice-Hall in 1988 and McGraw Hill in 1992) and the basis of much of the work at the HPDRC. The central notion of semantic models is the concept of object, which is any real world entity that information is stored about in the database. The relational database model has become the state of the art in commercial database management. However, in situations where the structure of information is complex, where greater flexibility is required or where non-conventional data is involved, the semantic approach can be more effective.

"I got interested in semantic models because of their mathematical clarity and elegance," Rishe explained. "When you have simple structures, they're easy to analyze. I started doing some theoretical investigations into the mathematical elements of the databases, but then I concentrated more on the development of data structures and algorithms and methodologies."

After completing his military service and doctorate, Rishe sought a position at a university where he could continue his research. In 1984, The University of California-Santa Barbara beckoned with the offer of a visiting professorship. When his term expired in 1987, he decided he wanted to remain in the U.S. and he accepted an offer from FIU to join its School of Computer Science.

The HPDRC was founded in 1994 to help focus research in the School of Computer Science and attract increased external grants and contracts. The center conducts research on database management systems and various applications, leading to the development of new types of database systems and refinement of existing database systems. Today, the HPDRC's staff is made up of over 100 professionals including seven professors leading research areas, four post-doctoral researchers, 17 full-time research associates and programmers, 70 research assistants, and managerial staff.

The HPDRC's flagship project is a highly parallel database system based on the semantic/object-oriented approach. Its research aims to significantly improve the usability and efficiency of highly parallel database computers and machine clusters (tightly networked groups of machines). They are developing algorithms and a prototype database management system based on the semantic binary database model.

The center's research has been eagerly sought and supported by government agencies and industries, which provide its funding. NASA currently provides the largest amount of funding ($4 million) for the Center, and other major sponsors include the National Science Foundation, U.S. Department of Defense, U.S. Department of the Interior, U.S. Information Agency, NATO, Florida Department of Commerce, Florida Department of Education, Ameritech, and GeoNet Limited.

The Center has been developing a semantic database management system for NASA, and in 1996 the NASA Goddard Space Flight Center and the University established a Regional Applications Center at FIU. The collaborative effort, which has expanded the practical applications of remote sensing data obtained by NASA (primarily from orbiting satellites), is designed to serve public and business needs. Applications include agriculture, weather forecasting and hurricane preparedness. The Center has also designed a database system for Everglades National Park which stores the environmental data being collected throughout the unique ecosystem.

"You wouldn't believe the amount of data that's available," said Patrick Corano, who helps manage information from satellites at NASA's Goddard Space Flight Center in Maryland. "NASA is overseeing 10 research programs designed to make information easier to retrieve. But FIU's stands out. They are the best one. NASA wants to make sure that businesses and local governments — not just scientists — have access to this information."

In addition to storing and analyzing data, much of the Center's research is devoted to developing more effective ways for computer users to present data to users — for instance, graphic displays of data, which enables people without extensive technical expertise to use the information. (For a demonstration of the databases developed by the HPDRC, visit their website at hpdrc.cs.fiu.edu.)

The HPDRC also has a strong commitment to training graduate students and preparing them for their future roles as scholars and specialists employed by industry.

"Most of the student employees in the center are here not because we're paying them much, but because they get training which is very valuable for industry careers," Rishe noted. "In fact, it's so valuable that it's hard for us to keep students for long because they get offers from industry. We're exposing them to the most high-tech environment."

Looking toward the future, Rishe looks forward to expanding and enhancing the operations of the HPDRC and to perfecting breakthroughs for improved databases. To his way of thinking, their potential is virtually limitless — and elegance and flexibility can resolve some of the most complex database dilemmas that arise.

"For example, you wouldn't have the Y2K problem (the millennium computer bug) if a database is properly designed," he asserted. "The Y2K problem is just an example of one problem that can occur in a database. Good design and methodology makes a database flexible to changes — and this includes such a trivial thing as the change in millennium."
Developing the

More than any other structure on a university campus, the library personifies the spirit and the very essence of knowledge and learning. And at Florida International University, the Libraries reflect the significant changes in the storage of information and the delivery of education at the dawn of the 21st century. In addition to traditional volumes and journals, they incorporate the latest electronic technologies to provide the greatest possible access to information — at the University or from points around the world.

"In the computer age, librarians have proved their value through emphasis on the user and their needs rather than on systems and their capabilities," said Laurence Miller, director of the Libraries. "The emphasis is on making the student or faculty member a more intelligent information consumer."

"In the new information age," continued Miller, "librarians are needed more than ever to help students and faculty use a variety of new and traditional information resources. With electronic media, we become part of the user interface and make it more hospitable. With traditional print sources, we show the user how to gain better access than ever before to books and journals through the skillful use of electronic indexes. The teaching of information literacy — with its emphasis both on technical skill and the evaluation of information — is a greatly improved version of traditional library instruction. All of our new electronic resources enable us to do our traditional job better — that of bringing together the library user and the information needed."

The new $40 million, eight-story Steven and Dorothea Green Library at University Park and the North Campus Library (which opened in 1988) house more than 1.15 million volumes and 8,650 journals and other serials. But that's only the beginning; they serve as the gateway to an infinite wealth of electronic information. The FIU Libraries are taking advantage of a strong and complex telecommunications infrastructure to expand their virtual information resources.

The University Park Library in particular exemplifies the state of the art in technology. Last year, it became the first building on campus to be wired for the new campus Asynchronous Transfer Mode (ATM) infrastructure. ATM brings broader bandwidth and faster response time to the desktop. Finally, the development and growth of the Internet provides an additional infrastructure for information to be published, accessed and retrieved from all over the world. The library at University Park has more than 200 computers. More than 50 computers are available in the library at North Campus.

Patricia Iannuzzi, head of the Reference Department at University Park and co-director of the Information Literacy Initiative, has taken the lead on electronic collections, distance learning, and information literacy in the Libraries. She recently completed a book on teaching information literacy that is being published by Allyn and Bacon.

"Libraries will continue to evolve as gateways to the world of information, and library users will enter our virtual doors to find that information," Iannuzzi said. "We continue to take great strides in digitizing information, but the task of digitizing the entire recorded history of humankind will require the efforts of generations of librarians. Now and in the future, librarians will continue to serve as intermediaries between the world of information and the consumer of information. We at FIU have taken a leadership role in meeting this challenge."

She believes that as the information environment evolves from print to digital, librarians will become advocates in the decision-making process of the information industry and designers of interfaces to help users navigate the information environment. They will also work together with teaching faculty and administrators to make information literacy a fundamental component of the curriculum in higher education.

The following are some highlights of the Libraries' electronic resources:

**FIU's Virtual Library**

The FIU Libraries subscribe to over 170 databases on topics ranging from architecture...
Some are broad, such as Periodical Abstracts and General Academic Index; others are specific to a discipline, such as Avery (architecture), RILM (music), PsycInfo, Engineering, and ERIC (education); and many are specialized within a discipline, such as WeldaSearch, National Trade Data Bank, and AIDS and Cancer Research.

Almost all the databases are web-based interfaces as the Libraries move from local CD-ROM networks to contractual licensing for Internet access. Full text of articles is available for several thousand periodicals, mostly from popular and business periodicals and newspapers. Access to full text of articles from scholarly/research journals is currently available from two new services. JSTOR provides full text access to over 100 core journals. Elsevier, purchased cooperatively with several other SUS libraries, provides access to over 680 current research journals.

The Library is also playing a role developing software for the FIU-IBM Digital Library Project, which can stream full motion video to all University computer workstations via the Asynchronous Transfer Mode (ATM) network.

Library Instruction and Information Literacy

The evolution from a print-based to a digital-based information society is providing greater access to information, while at the same time creating information-seeking processes that are increasingly more complex. Expanding access increases choices and underscores the need for both technical and critical thinking skills for students to identify, locate, evaluate and use information in all formats. Last year, the libraries taught over 600 classes to more than 12,000 students, and the need continues to escalate. Over 20 workshops were also customized for faculty and administrative units.

Last year, the FIU Libraries partnered with the Academy for the Art of Teaching to launch the Information Literacy Initiative, which provides workshops and individual and departmental consultations for faculty who wish to integrate information literacy objectives into their courses.

Geographic Information System Laboratory

The new remote-sensing Geographic Information System (GIS) Laboratory, an electronic/map imagery library, has been established in the library. Under the leadership of Jennifer Fu, documents librarian, and with support and funding from Academic Affairs, the GIS lab serves as centralized facility for research and teaching across all subject areas. The GIS Lab can access sources such as TigerLine, LandView, Geosight Fact Finder, etc. These sources allow for the extraction of selected geographic, cartographic, and demographic data.

Everglades Digital Library

Under the leadership of Gail Clement, science librarian and project director of the Everglades Information Network/Digital Library, and in partnership with the South Florida Research Center at Everglades National Park, the National Park Service, FIU Sponsored Research and Training, and FCLA, the Everglades Digital Library (EDL) has become a reality. Funding from the Everglades National Park supports the project director’s work to digitize materials from the park and make them available for students, researchers, and the public worldwide on the Internet. The EDL has also established a bibliography database of materials related to the Everglades.

Director of Libraries Laurence Miller
While Florida International University's record construction program may be the most visible sign of change and growth at the University, there's another transformation taking place that's not as obvious but is every bit as significant. The University is now in the early phases of instituting a plan that will transform not only the way the University functions and supports its constituents, but the way students learn and the way faculty teach. The plan represents FIU's vision for information technology for the University.

Through the plan “Technology for the Top,” FIU’s Information Resource Management (IRM) is introducing sweeping changes in the way computers, computer networks, and new digital technologies are used throughout the University. IRM’s strategic directions for the University encompass nine general information technology areas: single-organization, people-oriented networking, University-wide “computing engine,” people-centered administrative services, workgroup solutions, voice communications, hi-tech/multimedia course development, DIRECTnet research laboratory, and quality management.

“We needed a blueprint for where we were headed in the future,” said Arthur Gloster, the University chief information officer. “Being an urban, growing institution we need to develop asynchronous learning and use all the available technologies to enhance the education we offer.”

Notable accomplishments during the past year that are part of the plan include:

- Web access for student enrollment support: This makes enrollment available through FIU’s web site. For students, it means easier and faster enrollment procedures which are consistent, and shortened notification time. For FIU, it reduces costs and the time it takes to process students, provides greater access to students and improves the accuracy of data.
- Asynchronous Transfer Mode (ATM) is a higher-throughput, switched network architecture capable of supporting multimedia education-on-demand to offices, classrooms, residence halls, and desktops in the UP and NC libraries.
- The Digital Library, an ongoing project under construction, is a collection of online materials accessible to the FIU community. It will include the storage of special collections, digitized lectures, multimedia courses and other large “binary objects.” One example is the new Everglades Information Network and Digital Library, which provides worldwide research access to information about the Everglades and its unique ecosystem.
- Asynchronous learning is technology applied to instruction. With this type of instruction, students will no longer have to come to the classroom to take a class. Also, the method of instruction is self-paced. This method of instruction may be most useful to commuting students.
- Asynchronous learning — which could be described as “education on demand” — is perhaps the most exciting development in distance learning and one with the most enormous global potential. Asynchronous learning offers individualized learning from home, work or campus; interactive multimedia instruction; and continuing assessment by faculty, assistant and student. It is based on the latest digital technology and networking.

There are plans to introduce leading-edge and experimental technologies to implement a multimedia asynchronous education-on-demand environment. Through DIRECTnet — Digital International Repository for Education, Commerce and Telecommunications (net) — the University is exploring technologies that have not been used elsewhere. This includes the pilot use of notebook/laptop computers (wired and wireless) as a tool to access the new asynchronous learning environment. These would replace or supplement desktop PCs so students could “plug in” to network or World Wide Web sources of data from any location.

The cost and scope of Technology for the Top’s goals is quite significant — a $20 million investment through the year 2000. The IRM staff is developing strategies to supplement current resources in order to achieve these objectives. One of the principal strategies is the development of collaborations with select industry partners. Partnerships with Bell South, IBM, TCI, and Hewlett Packard have already been formed, and other collaborations are being explored.

With “Technology for the Top” as its blueprint, FIU will successfully meet the technological challenges of the next century while enhancing learning and expanding the University’s operations.
The purpose of medicine is to prevent significant disease, to decrease pain and to postpone death when it is meaningful to do so. Technology has to support these goals — if not, it may even be counterproductive.

— Dr. Joel J. Nobel, co-founder, Emergency Care Research Institute, 1985
Remember as a child when your mother begged you to eat your broccoli and spinach, insisting that they were good for you? She was right — and it wasn’t just for the vitamin A and C or iron they provided. According to two FIU researchers, two substances contained in green, leafy vegetables and yellow vegetables and fruits (such as corn and apricots), may help protect the eye from developing age-related macular degeneration (AMD), the leading cause of vision loss in the U.S. The irreversible disease afflicts 20 percent of people over the age of 65 and 35 percent of those over 75.

For the past 15 years, Richard Bone, professor of Physics, and John Landrum, associate professor of Chemistry, have collaborated on research on the macular pigment and its possible connection with the eye disease. The macula is the portion of the retina (approximately five millimeters...
in diameter) that is responsible for the central part of the visual field. The central part of the macula is distinguished by its yellow coloration, the "macular pigment." Despite its small size, this region of the retina is endowed with the highest degree of visual acuity.

For two centuries, the composition of the macular pigment had remained a mystery. Francesco Buzzi, an ophthalmic surgeon, discovered in 1782 that the central part of the retina was marked by a yellow spot. George Wald, 1967 Nobel Laureate in medicine, postulated the macular pigment was composed of lutein and he proved the carotenoid nature of the pigment.

Until the 1980s, though, it was not known with certainty what substances constituted the macular pigment. That is, until professors Bone and Landrum met at FIU, discovered they shared common research interests and developed their collaboration.

"I'd been working on the macular pigment and was interested in its effect on vision," said Bone, a biophysicist.

"I was studying its ability to render the eye sensitive to polarized light. ...When I met John and told him, 'Nobody really knows what this pigment is,' John told me that's what chemists do. We've been collaborating ever since," commented Bone. "It's a multidisciplinary collaboration, and each of us has had to learn from the other."

In a paper published in 1985, Bone and Landrum revealed that the human macular pigment is composed of lutein and zeaxanthin, two pigments that are found in many vegetables and fruits.

"We now know it's composed exclusively of these two carotenoids," Landrum said. "The high concentration of these two carotenoids is one of the surprising features of the macular pigment. This is evidence that the macular pigment is functionally significant."

Recent research has focused on further analysis of the pigment, its relationship to AMD, and its absorption, transport and metabolism.

As they delved further and further into their research, the two professors became more and more convinced of the macular pigment's importance in protecting the retina. "The macular pigment's ability to absorb blue light is probably its most important ability," Landrum noted, "but it may also function by directly deactivating extremely reactive singlet oxygen generated in the retina by blue light."

More than a decade of research led up to the studies Bone and Landrum have been conducting the past two years. Based on evidence suggesting the protective role of the macular pigment — and research noting an association between a particular type of macular degeneration and a diet low in lutein and zeaxanthin — they wanted to address two related issues: Do lower than normal levels of macular pigment represent a risk factor for the development of AMD? Can dietary supplements of lutein and/or zeaxanthin increase pigment levels in the macula, thereby providing additional protection against AMD or slowing its development?

To answer the first question, they compared the macular pigment of normal and AMD donors, which seemed to support the hypothesis: the lowest levels of macular pigment were found more frequently in the eyes of donors having the disease.

"AMD is a multifactorial disease," said Bone, "and it appears that low levels of macular pigment may constitute one risk factor."

To study the second issue, Bone and Landrum ingested a lutein supplement daily for 140 days; over the course of the experiment and...
A model, developed by Richard Schoephoerster, which simulates the flow of blood.

thereafter, the level of lutein in their blood was measured as well as changes in the level of their macular pigment. To measure the pigment, Bone developed an instrument called a heterochromatic flicker photometer. Once again, their hypothesis was confirmed. Although it appeared to be a slow process, after 140 days of lutein supplementation there was a 20 to 40 percent increase in the pigment level. This increase reduced by 30 to 40 percent the amount of blue light reaching the tissues which are damaged in macular degeneration. Their research also revealed that while lutein and zeaxanthin are transported into an individual’s retina in the same proportions found in blood serum, much of the lutein is converted into meso-zeaxanthin, a unique nondietary form of zeaxanthin. This metabolic conversion is important evidence of the physiology of the macular pigment.

The data Bone and Landrum obtained, as well as that of others, suggests that macular pigment does protect the retina; lower pigment levels could contribute to the more rapid development of characteristics associated with AMD. In addition, long-term lutein supplementation can significantly increase the level of pigmentation within the macula. They are currently conducting a six-month study with 24 volunteers — funded by the Rehnborg Center for Nutrition and Wellness — to determine the effect of a lutein-containing supplement on macular pigment density.

Bone and Landrum have received some $700,000 in external funding for their research on the macular pigment, mostly from the National Institutes of Health. The National Eye Institute and the Food and Nutrition Board of the National Academy of Sciences are interested in their current work; they are considering whether a RDI (Reference Dietary Intake, comparable to the Recommended Daily Allowance) should be established for lutein and zeaxanthin.

“Lutein or zeaxanthin or both may be recognized before long as essential nutrients for the continuing health of the eye into old age,” Bone said. “There’s more that needs to be done, but it’s good to have had the opportunity of providing a significant contribution to our knowledge of these compounds.”

“Our research began with a modest project to identify what was considered an insignificant feature of the retina,” Landrum said. “The results of our study of the macular pigment have surprised us several times over the years. We hope that our current efforts can further clarify the role of macular pigment in the disease process of macular degeneration.”

**Better Health Through Engineering**

In recent years, South Florida has become a hotbed for technology development in biomedical engineering. The tri-county area (Miami-Dade, Broward, Palm) has more than 890 biomedical firms employing 19,000 persons; Miami-Dade County ranks eighth among U.S. counties for employment in the medical devices industry; and Florida ranks third among U.S. states with 1,089 health technology firms.

To capitalize on this opportunity, earlier this year FIU established the Cardiovascular Engineering Center (CVEC), a multidisciplinary unit in the College of Engineering that brings together academia, industry and clinical medicine to advance cardiovascular science and technology. Though this union, the center intends to increase the speed and effectiveness of the transfer of basic and applied research to practical applications in clinical medicine. The CVEC also provides biomedical
engineering education and training at all levels, ranging from precollege to postgraduate to professional. The research of two members of the Mechanical Engineering faculty, Richard Schoephoerster and James Moore, constituted the foundation of the center, and the two of them recognized the potential of creating the interdisciplinary unit.

Last July, the state Board of Regents approved a master’s program in biomedical engineering for inclusion in the University’s five-year plan; it is hoped the program will be launched in fall 1999. The CVEC serves as the heart of FIU’s biomedical engineering program, which is designed to prepare graduates for careers in the industry. The CVEC faculty reflect its interdisciplinary approach; they are drawn from the Electrical and Computer, Industrial and Systems, and Mechanical Engineering departments of the College of Engineering, as well as the Department of Biological Sciences (in the College of Arts and Sciences) and the College of Health Sciences.

Research at the CVEC, which ranges from basic to applied, focuses on the design, development and enhanced implementation of diagnostic, interventional, therapeutic, and replacement systems and devices associated with the cardiovascular system and the transport or analysis of blood. Research has been conducted in areas including: biofluid and biosolid mechanics; experimental, mathematical and computational modeling; biomaterials; artificial heart valves, cardiovascular devices and instrumentation; computer vision, bioimage and signal processing; and diagnostic imaging.

For example, the research of CVEC director Schoephoerster focuses on the effects and mechanics of blood flow. His major research projects have examined:

• the effect of blood flow on coagulation, the ways in which coagulation can cause thrombosis, clotting of artificial heart valves, and the dangers of blood coagulating with other artificial biomedical materials

• the hydrodynamics of artificial heart valves: how well they’re made and how well they function

• a computational model of blood flow in the heart to enable a more accurate assessment of heart function.

“The creation of the center was a dream of mine since I got here (to FIU) in 1990,” said Schoephoerster. “We thought it was important to develop partnerships with local industry and clinicians. This will not only help our research program, it will help our students, who will work on master’s research projects with our industry partners. It will also help industry by furnishing graduates trained in the field.”

Moore, the other founding partner of the center, has conducted research which focuses on the mechanics of the cardiovascular system and the interaction with the biological tissues which make up the arterial walls. Three primary projects have emerged from this interest:

• the mechanical factors that cause atherosclerosis — hardening of the arteries, the leading cause of morbidity and mortality in industrialized nations — may be linked to the disease’s localization in four specific locations, usually the neck or the arteries around the heart. Research has concentrated on two forms of “stress” the arteries are
subjected to, the ways in which they effect the cells and how these processes lead to the formation of atherosclerosis.

- quantify the blood flow patterns in the coronary arteries to better understand how mechanical factors are involved in atherosclerosis formation.
- analyzing changes in blood flow patterns created by the placement of stents in arteries and developing new stent designs to alleviate these flow disturbances. Moore has filed a patent application for a new stent he designed.

“In order to develop work in this field, it’s essential to collaborate with medical doctors, biologists and other scientists,” Moore commented. “These collaborations provide a valuable perspective on one’s work.”

Other CVEC faculty and their research specialties include:

- Malek Adjouadi (Electrical and Computer Engineering) - computer vision, image analysis, pattern recognition
- Armando Barreto (Electrical and Computer Engineering) - biosignal processing, EEG feedback
- Rene Herrera (Biological Sciences) - molecular biology, gene expression and mapping
- Rainer Schmitt (Electrical Engineering; director, Fraunhofer Technology Center) - ultrasonic imaging and system design, transducer design and manufacturing, biomedical instrumentation
- Patrick Shen (Medical Laboratory Sciences) - hematology, medical laboratory instrumentation.

The center also recently hired a research coordinator to act as a liaison between faculty/students and industry and is in the process of recruiting two additional faculty members.

The interdisciplinary, collaborative nature of the CVEC, as well as the partnerships it has forged with South Florida companies and organizations, complements and reinforces the center’s strength and potential. Partner organizations (which have the described biomedical specialties), are also represented on the CVEC Advisory Board:

- Althin Medical Inc. - artificial kidney and dialysis machines
- Baptist Health Systems - Baptist Hospital and the Miami Vascular and Cardiac Institute
- Beckman-Coulter Corporation - automated hematology analysis
- Boston Scientific Corporation (Symbiosis Division) - surgical instruments
- Cordis Corporation (a Johnson & Johnson company) - cardiovascular interventional products

- Corvita Corporation (a Pfizer company) - vascular grafts and biomaterials development
- Fraunhofer Technology Center - university-industry biomedical technology transfer.

In November, the College of Engineering was awarded a $1 million grant from the Whitaker Foundation, which is dedicated to improving health through the support of biomedical engineering. Based on the CVEC and its alliance with industry partners, the funding will be used to establish a Biomedical Engineering Institute at FIU.

The partnership with Baptist Hospital has been particularly close and offers a promising prospect: it may conduct clinical trials to test the findings and technology developed at the CVEC.

“Baptist and its Vascular and Cardiac Institute make for a good partnership,” Schoephoerster said. “We envision a team approach where they will come to us with ideas. Their doctors are also interested in basic research, which is an environment they don’t have.”

In addition to collaborative research, FIU biomedical engineering students will rotate through a variety of clinical areas at Baptist applicable to their research and thesis subjects.

“We hope in the next few years this partnership will be even more collaborative,” said Dr. Jack Ziffer, director of cardiac imaging at Baptist’s Miami Vascular and Cardiac Institute. “It offers benefits for both FIU and Baptist.

“We offer the potential opportunity to apply basic research in a clinical environment and we can provide insight into areas that are clinically important and help the relevance of FIU’s research efforts. And we get to learn about new developments in engineering and science that may ultimately help patients. In a sense, ultimately we can function as a combined entity — a medical school without the medical students, with researchers spanning the gamut from basic to clinical science.”

SECRETS FROM THE DEEP

In the early 1500s, Ponce de Leon searched in vain throughout Florida and the Caribbean for the fabled “fountain of youth.” But if he was on the scene four centuries later, the explorer might have found clues to the secret he sought in a laboratory in the Perry Building at FIU-University Park. That’s home base for a veteran FIU microbiologist and immunologist who is hot on the research trail — a journey that has led her from the lab to the sea.

Sylvia Smith, professor of Medical Laboratory Sciences who has been at FIU since 1974, has spent 20 years studying the extraordinary immune system of sharks. Given the hearty nature of sharks and their phenomenal longevity as a group, perhaps it’s not surprising that they may hold some medical secrets. Sharks are among the most ancient surviving animals on earth, dating back some 350 million years and predating all teleosts or bony fish. Sharks have no bones, their skeletal structures being all cartilage. What’s more, they’re a remarkably healthy group, and have gained a reputation for being virtually tumor-free.
"They're very primitive, they've survived for a very long time and their immune system is definitely an integral part of their success," Smith said. "What better than to study the immune system of an animal with such impressive resilience to viral infection and tumor growth — their record shows that they must be doing something right!"

Smith's interest in sharks developed from her studies in microbiology and immunology, the fields in which she received her undergraduate and graduate degrees. Her early research focused on bacteria resistant to antibiotics, specifically erythromycin-resistant streptococci, which can cause scarlet and rheumatic fevers — sicknesses contracted by her and her mother.

Her later studies with Georg Jensen, who carried out pioneering research on the shark complement system, the proteins in blood serum which carry out immune function, led to her continuing interest in this complex aspect of the immunology of these sea creatures. She has been carrying out her federally funded research using techniques of molecular biology in her laboratory at FIU, to analyze blood samples obtained from eight nurse sharks kept at the Keys Marine Laboratory in Long Key. Her studies have led to collaboration with colleagues at St. Andrews University, Scotland, Oxford University, England, and the universities of Tokyo and Kyushu, Japan.

Last year, Smith launched a study of sharks' antibacterial peptides, proteins that fight bacteria. "These could well prove to be of medical significance," she noted, "if we can identify molecules or molecular structures that can be used as blueprints to produce a product effective against bacteria, especially against those resistant to run-of-the-mill antibiotics in common use. We've already been able to identify shark substances with these antibacterial properties."

Her other major research pursuit, which she initiated about three years ago, evolved from a conservationist concern: the decimation of shark populations due to consumer demand for shark cartilage. The use of this preparation, a food supplement made from the powdered cartilage of sharks, has become very popular due to its alleged health benefits.

"No study has definitively proven that shark cartilage does, in fact, cure any specific medical condition," Smith said. "We expected to show that shark cartilage doesn't do anything." Much to her surprise, it appears that the opposite is true. She found that commercial shark cartilage can induce a "tumor necrosis factor (TNFa)," which is known to help control the development of some tumors. Other studies have shown that preparations of mammalian cartilage can inhibit angiogenesis — the ability to generate new blood vessels — which restricts the growth of tumors.

"We need to be cautious about interpreting the potential pluses," Smith warned, adding that she would like to conduct clinical research on the effect of shark cartilage. "As yet, we don't know enough about it and that worries me. We need to know much more. Many people are taking shark cartilage and they don't have a clue what it's doing. What is its short- or long-term effect on normal immune function? Does it compromise our system in the long run?

"I want to learn more about how our innate immunity protects us. What role does immunity play in our survival? That's why I became interested in the shark — because it has survived so beautifully."
Melanie Green began her career in education as the “Mom from Hell.”

“When my son was in fourth grade, I discovered that he was reading two levels below where he should have been, but his teachers didn’t see that as a problem,” she said. “So I became the ‘Mom from Hell’ — advocating for change, working for excellence, never letting up for a minute, demanding that the teachers and the administrators fulfill their maximum potential.”

Today, Green’s son is in his high school’s gifted program, and earlier this year she was awarded one of the most esteemed honors in local education: the Miami-Dade County Teacher of the Year Award. Green, who teaches emotionally disturbed children at Centennial Middle School, is the first FIU alumnus from the College of Education (1993) to receive this distinction.

Not bad for a “problem child” who once dropped out of college to become a free spirit who survived by working as a freelance writer, dress designer, librarian, political activist and accounting clerk among other things. But regardless of her job at any given time, she has always been a teacher.

“When I was younger, I never recognized my desire to teach in a formal way,” she commented, “but, nevertheless, throughout my life I have always been a teacher.”

An exceptionally bright child, Green was one of the first students to participate in the Dade County School System’s newly instituted “gifted” program in the ‘60s. By the time she was in second grade, she was the teacher’s assistant, tutoring other students and even being a “little teacher” for her younger brother. Her home life was equally nurturing, with two wonderful, caring parents who were attentive to the needs of their growing daughter.

But then her life derailed. She was sexually abused by a neighbor, and her mother became seriously ill with multiple sclerosis.

“Back then, these were troubles that no one wanted to talk about, no one knew quite how to deal with, and I was left with a lot of emotional scars,” Green said. “So, even though I was still making straight A’s, by the time I reached fifth grade I had been labeled as a ‘problem child.’”

She struggled through middle school, still in the gifted program and making top grades, but unsuccessful in managing her emotional turmoil. However, by high school she had regained some of her equilbrium and, after graduating with honors, she enrolled in a new and experimental psychology curriculum offered by Miami-Dade Community College (MDCC).

“But despite being an overachiever, I didn’t have the discipline at that time to stay in the program, so I drifted away,” she said.

Green moved to Los Angeles, working her way across the country by traveling with rock bands and penning freelance articles for entertainment magazines. She became politically active — joining the McGovern presidential campaign — and worked part-time as a library aide. In her spare time, she started designing costumes for local stage productions and eventually created and sold her own line of clothing.

“Working in the library, being around all those books, was what finally made me think about going back to school again,” Green said. “From time to time I would request my transcripts from MDCC and try to apply to college. But since so many years had passed and because the program I was in had been very experimental, few of the credits transferred — so I would postpone applying for another year, and another, and another.

“Finally, I got a letter from MDCC because I had requested so many transcripts, and they said, in effect, that it was time for me to make a commitment.”
So Green returned to her hometown of Miami to finish college, but her academic aspirations were put on hold one more time.

“When I found that my son was not receiving the quality of education that he should have, advocating for change became my full-time job,” she said. “But I didn’t have the knowledge or the background to be effective — so my ultimate motivation to go back to school I owe to my son and to my husband, who believed in me and told me hundreds of times that a mind is a terrible thing to waste.”

Fifteen years after she had “dropped out” of college, Green re-enrolled in MDCC. Her first professor was Shirley Johnson, who at that time taught the “Introduction to Education” course.

“She inspired me so much. That’s when I knew, finally, that I wanted to become a teacher. I went from being the ‘Mom from Hell’ to a ‘Student with a Vengeance.’”

But if Johnson sparked Green’s desire to teach, it was FIU professor Joseph Kaplan (who passed away in October) who stoked the fire.

“After my first test in his class, he told me that I did very well, and from that point on he became my mentor,” Green said. “We still keep in contact and he remains one of my greatest inspirations.

“He taught me his own work ethic — that teaching is not a 9 to 5 job. You have to get out and do things, it’s not enough to read journals. You have to volunteer and get involved, not only in the education community but in your own community.”

While studying at FIU, Green (an honors student) was involved in school, community, professional and service organizations with an intensity she maintains to this day. For example, at Centennial Middle School she established Project H.E.A.L. — a remedial reading program designed to promote literacy in at-risk students. She also conducts in-service training for teachers and parents, and has established school clubs to enhance students’ awareness of their community and their future.

A few months before she was due to graduate from FIU, however, Green’s life was derailed once again: she was diagnosed with brain cancer. Her only hope was a dangerous operation in which doctors would have to enter her spinal column for a biopsy to rule out brain cancer. The prognosis was not promising: the operation would cure her, leave her paralyzed, or perhaps even kill her.

With indomitable courage, Green went ahead with the surgery. She woke up on March 15, 1998 — St. Patrick’s Day — practically blind and paralyzed on her entire right side.

“I was horribly depressed at first, but then I heard a news report about a disaster where dozens of people had died, and I knew that I was lucky to be alive. I vowed that every morning that I would walk — literally walk — during commencement ceremonies in May,” she said.

Green’s overachiever attitude went into overdrive, and she performed her therapy strenuously, even taking dumbbells to work out extra hours throughout the night. Her blindness proved temporary, and her strength was slow in returning.

“I was worried that I would not be physically able to perform the job I had trained so long for,” she explained. “Then I got a call from the dean of the College of Education who told me not to worry. He said, ‘We’ll take care of you.’ And the professors and the FIU community supported me so much that I was able to concentrate on getting well.”

On April 27, 1998, Green arrived at Commencement in a wheelchair.

“But Joe Kaplan had set things up so that my chair was near the stage, and he had even arranged for a special usher to help me walk — if I could. I did. I walked across that stage. It took a long time, it was very painful, and I needed to lean on someone, but I walked all the way across. Actually, I was glad to sit back down after I got to the other side!” she remembers with a smile.

That kind of indomitable courage and resolve to never give up, no matter what the odds, characterizes Green’s teaching style.

“I always remember my own experiences when I walk into a classroom,” she said, “and I believe that helps me reach and motivate my students. My experiences have given me the perspective to understand the needs of my students. They have helped me develop the ability to look at a child who is struggling and suffering, and parents who are struggling, and to know how that feels, and to be able to truly dedicated educational professional who makes a real difference in the lives of children and adults every day.”

Green remains an activist and an idealist for the cause of education. Her ethos is echoed by a poster in her classroom which quotes the words of Marian Wright Edelman: “Service is the Rent We Pay for Living.”
The biological mingling of the previously separated Old and New Worlds began with the first voyage of Columbus. The exchange was a mixed blessing: It led to the disappearance of entire peoples in the Americas, but it also resulted in the rapid expansion and consequent economic and military hegemony of Europeans. Amerindians had never before experienced the deadly Eurasian sicknesses brought by the foreigners in wave after wave: smallpox, measles, typhus, plague, influenza, malaria, yellow fever. These diseases conquered the Americas before the sword could be unsheathed. From 1492 to 1650, from Hudson’s Bay in the north to southernmost Tierra del Fuego, disease weakened Amerindian resistance to outside domination. The Black Legend, which attempts to place all of the blame for the injustices of conquest on the Spanish, must be revised in light of the evidence that all Old World peoples carried, literally though largely unwittingly, the germs of the destruction of American civilization.

In this chapter of History Professor Noble David Cook’s book, Born to Die, the first New World pandemic — smallpox — is introduced.
The Deaths of Aztec Cuítlahuac and Inca Huayna Capac: The First New World Pandemics

“In the past year of 1518, smallpox, until now unknown by them, was ignited among them as flocks infected by contagious vapours.”

—Peter Mártir

“No one could move, not even turn their heads. One could not lie face down or on the back, or move from one side to another. When they did move, they screamed.”

—native informant for Bernardino de Sahagún

The First Pandemic: Smallpox

Sickness and death came to the Americas with the second Columbus fleet in late 1493. In the first quarter-century before the initial New World outbreak of smallpox in 1518, the worst killer of the Columbian exchange, the native populations of many of the islands of the Caribbean had already fallen sharply and most were nearing extinction. Nevertheless, the first smallpox epidemic was a watershed in the history of the peoples of the Caribbean and the mainlands beyond. The memory of that tragic event persisted long in the mind of the survivors, both the native Americans who suffered its debilitating scourge and the Europeans who witnessed their abundant labor force being annihilated.

The earliest documentary evidence for this devastating epidemic comes from the pens of Jeronymite friars Luis de Figueroa and Alonso de Santo Domingo, writing from Hispaniola on 10 January 1519 to Charles V. The friars reported further that the smallpox epidemic had spread to Puerto Rico: “We have been notified that already some Indians of the Island of San Juan have begun to die of the said smallpox.” A letter from the royal treasurer Haro directed to the king from Caparra (near modern San Juan) of Puerto Rico, on 21 January 1519, confirms the arrival of an epidemic on the nearby island. He reported that although the natives were generally well treated, they died regularly, for they were “as weak in the body as they are in the faith.”

Other contemporaries bemoaned the terrible loss of life in the Caribbean. Peter Mártir, who must have had access to the Jeronymite letters, and prepared his text by 1520, reported that “in the past year of 1518, smallpox, until now unknown by them, was ignited among them as flocks infected by contagious vapours.” Bartolomé de las Casas, who authored his description sometime after he returned to the island from Spain in 1520, provides a vivid account of the passage of the contagion. He must have quizzed both Indian and Spanish survivors for his history, and said “it was smallpox, and it was given to the pitiful Indians; it was carried by someone from Castile.” The Jeronymite friars in their correspondence of 10 January 1519 had failed to pinpoint the origin of infection, but they indicated that its impact was less deadly for the Europeans. “From the said pestilence some few of our Spaniards have been stricken, but none have died; nonetheless we are all fearful of the said smallpox, or another pestilence. Las Casas concurs with the Jeronymites, noting that he had been told that few Spaniards were touched, but between one-third and one-half the Indians died.

Las Casas lamented the disappearance of the island Taíno, writing that the epidemic left no more than 1,000 “of the immensity of peoples that this island held, and that we have seen with our own eyes.” The Dominican friar also described the terribly quick death that came to those who, feverish, bathed in the rivers. The Spaniards, when they realized the devastation being caused by massive deaths, attempted to find an effective cure for the ill. Bartolomé de las Casas admonished that really “they should have begun it many years earlier.” The Dominican suggested that the scarcity of adequate food, the native custom of nudity, the practice of sleeping on the ground, as well as excessive labor and lack of attention to health, all contributed to an elevated number of deaths.

The passage of the smallpox epidemic on Hispaniola coincided with an Indian resettlement policy adopted by Judge Rodrigo de Figueroa. The native population of the island had already declined to the point where, for the purposes of Christianization and proximity to a readily accessible labor supply, concentration of the reduced number of dispersed survivors seemed necessary to colonial officials and settlers. By the fall of 1518, Jeronymite friars, who oversaw the settlement policy, selected the sites of some 13 villages; five were inhabited by the spring of 1519. The smallpox epidemic began in the fall of 1518, and continued at least into January of the following year. But the death rate from smallpox was so great that it clearly reduced the population to the point that the forced resettlement of the remaining Taínos into villages was a farce. It is not surprising that a native revolt broke out soon afterwards. According to las Casas, the uprising began near Jaragua because an encomendero raped the wife of the cacique Ronquillo. On another level, Floyd believes the revolt may have been a reaction to the unpopular settlement policy. Clearly the futile explosion was a bold act directed against alien control and the disaster that it brought to their land. Unfortunately, the Taínos had been so quickly and brutally devastated that the effort to remove the foreigners had no chance for success.

Disease also ravaged Iberian settlers, and recent immigrants soon came to dread infection. This unease was justified, for Europeans, especially the newcomers, were regularly and quickly afflicted by illness. Judge Rodrigo de Figueroa wrote to Charles V from Santo Domingo on 6 July 1520 that 15 days earlier a group of 37 workers had arrived, under the direction of Luis de Berrio. He complained that “they brought women, children and servants, and all fell ill; some are convalescing.” On 16 September the same official wrote that “of the laborers who have come there are so many who have fallen ill that none remain, and some children and some women have died, and others have become ill, as you know.” On 11 November 1520, in another report to the monarch, the official wrote “this year it has rained poorly from May to now, and there have been an infinite number of sick.”

Crosby speculated that the illness that swept the Caribbean at this time “was not an atypically pure epidemic. Smallpox seems to have been accompanied by respiratory ailments (romadizo), possibly measles, and other Indian killers.” We do note the
Concern voiced by the Jeronymites that other epidemics might be on their way. The likelihood of pneumonia cannot be discounted, for death by pneumonia was common among those suffering from smallpox, but Crosby's suggestion of the simultaneous presence of measles does not appear to be verifiable, at least on the basis of most extant evidence. Gorjón mentioned the possibility of measles too. One important difficulty is that, in one of the minor forms of smallpox, as medical specialist C.W. Dixon has indicated, the symptoms do resemble measles. Oviedo referred to the pandemic and its ravages in his history: "there occurred an epidemic of smallpox so virulent that it left Hispaniola, Puerto Rico, Jamaica, and Cuba desolated of Indians", or "with so few that it seemed a great judgment from heaven."

The Aztec First Encounter

The Aztecs called it: huey xahuatl, or, the big rash; at other times they referred to it as totonomal-iztli. Robert McCaa recently pointed out that the earliest mention of the central Mexican smallpox epidemic in European records is provided in a letter of the oidor (judge) of the Royal Audiencia of Santo Domingo, written to Charles V on 30 August 1520. In the missive, Licentiatte Lucas Vázquez de Ayllón gave excellent details on the expedition of Pánfilo de Narváez, sent by the governor of Cuba to bring Hernán Cortés to justice. The fleet landed at Cozumel off the east coast of the Yucatán peninsula, finding there few natives left. Ayllón reported that the Indians had been stricken by disease brought by natives from Cuba. From Cozumel the flotilla continued on, in a northwesterly direction, and finally landed at Cempoala, near Veracruz, probably on 4 March 1520. "Smallpox broke out almost immediately. Vázquez de Ayllón reports that great harm had been inflicted on those lands because smallpox had struck the Indians there. The report states unequivocally that smallpox was carried from Fernandina [Cuba] to the mainland by natives in the Narváez expedition." Smallpox entered the central valley of Mexico with the expedition sent from Cuba to deal with Hernán Cortés, precisely at the time that the contagion was raging through the Greater Antilles. Native informants who were questioned later by friar Bernardino de Sahagún related that "while the Spaniards were still in Tlaxcala, a great plague of smallpox broke out among all the Indians." Cortés had escaped recently from the great city during the chaotic and, for the Spaniards, disastrous retreat of the Noche Triste and was resting and recouping forces to begin a new assault on the Aztec capital. Indian witnesses reported that the disease began its course during the twelfth month in the festival of Teosolco [10-29 September 1519]. "The force of this pestilence lasted for 60 days. It killed innumerable people; no one was left." According to Cortés' biographer, Francisco López de Gomara, "the Indians called this sickness huiztahuatl, meaning the 'great leprosy', and later counted the years from it, as from some famous event."

Francisco López de Gomara provides another account of how the disease was transmitted from the islands of the Caribbean to Mexico's Gulf coast. He wrote that "among the men of Narváez there was a Negro sick with the smallpox, and he infected the household in Cempoala where he was quartered; and it spread from one Indian to another, and they, being so numerous and eating and sleeping together, quickly infected the whole country." Elsewhere the biographer of Cortés reports that "smallpox was introduced by a Negro of Pánfilo de Narváez.

Other contemporary sources mention introduction by an African slave: Motolinía, Bernal Díaz del Castillo. But several other sources fail to do so. Whether or not he was the first in the party to sicken is unimportant, for it is clear that others, Cuban natives, in the Narváez camp carried the disease to the Mesoamerican shore. With the arrival of the pathogen on the coast of Veracruz, it was only a matter of time before the sickness spread. According to the largely Tlaxcalan informants of friar Sahagún, "It began in Cuatlán. When they finally took notice, it was already well developed. It went towards Chalco. And here its power diminished, although it did not completely end." Beginning in the twelfth month, after 10 September, it spread rapidly from 30 September through 19 October, and, according to the witnesses of Sahagún, "it was not until the celebrations of Panquetzaliztli [fifteenth month, 9-28 November] that the faces of our warriors were clean." Contemporary European descriptions of the symptoms are horrifying enough, but there is added poignancy in the lamentations of those who were most afflicted and voiced their agony:

"Some were hit hard; it extended to all parts of the body, the face, the head, the chest. It was not just the pustules that were so painful, even quenching one's thirst caused excruciating pain. It was a dreadful illness, and many people died of it. No one could walk; they could only lie stretched out on their beds. No one could move, not even able to turn their heads. One could not lie face down, or lie on the back, nor turn from one side to another. When they did move, they screamed in pain."

Traditional Aztec medicine failed to assist those stricken by the force of the infection. Sweat baths, followed by cold ones, had been widely used to treat common American illnesses associated with fevers. Francisco López de Gomara described the results for Nahua peoples: "It was their custom to bathe as a cure for all diseases, they bathed for the smallpox and were struck down. They had the custom, or vice, of taking cold baths after hot ones, so a man sick with the smallpox only escaped by a miracle."

In this case, as often happens when a terrible disease outbreak devastates a population, so many fell infected that no one remained to feed and nurse those who were recuperating. Countless people fled in fear in order to avoid the contagion; parents left their children, husbands their wives. "Many died from it, but many died only of hunger. There were deaths from starvation, for they had no one left to care for them. No one cared about anyone else." The Spanish had witnessed in the Old World the sad relation between disease and starvation, particularly during periodic outbreaks of the bubonic plague, which frequently happened in the sixteenth century. López de Gomara describes the disaster in central Mexico: "and then came famine, not because of a want of bread, but of meal, for the women do nothing but grind maize between two stones and bake it. The women, then, fell sick of the smallpox, bread failed, and many died of hunger. Panic and flight were all too common reactions to epidemic disease in the sixteenth century. We now understand the mechanism by which infection is passed on; they did not. Contact with the smallpox virus is necessary for its spread. Contact could come directly from the material in secretions in the nose and throat, carried in droplets in the air, or passed by touch from the liquid in the pustules. The virus could also persist encapsulated in the scabs. When the virus entered the victim's respiratory tract, the incubation was about eight to ten days before the manifestations: fever, malaise, then a generalized eruption on about the third day of the onslaught, then the shift from pappules to vesicles, and finally pustules, if one lived that long. Variations in Aztec mortality were recognized by the Amerindian informants of Sahagún. "Some people were hit with the pustules well separated from one another; not many died from this. But many who came down lost their good looks; they were deeply pitted and remained permanently scarred. Some lost their sight and became blind." Other symptoms are provided by a Nahua medical manuscript of 1528: it clearly describes the disease assault on Tenochtitlan while the Spanish forces were in Tlaxcala following the Noche Triste. "Almost the whole population suffered from racking coughs and painful, burning sores. As a consequence of variations in mortality, it is impossible to estimate accu-
rately the overall loss of life in Central Mexico during this initial killer pandemic, nevertheless, it was appallingly high. When the Spanish finally recaptured the Aztec capital, "the streets were so filled with dead and sick people that our men walked over nothing but bodies."

The smallpox entered Mexico at a most propitious time for the European invaders. Thrown out of the Aztec island capital of Tenochtitlan by the great native uprising, and losing a large number of troops during a midnight escape that came to be known as the Sad Night or Noche Triste, the outsiders were temporarily vulnerable. When Aztec ruler Moctezuma died, his relative Cuitlahuac, the very capable lord of Texcoco, was chosen to replace him. Cuitlahuac, in order to secure steadfast allies against the Europeans, freed subjects from tribute contributions for a year. Furthermore, Cuitlahuac recognized that lances could be used effectively against the foreign horse; this knowledge, coupled with great numerical superiority, might have permitted some measure of Aztec success against the outsiders. But his leadership was not destined to last. Years later, Dominican Francisco de Aguilar, who had been with Cortes during the conquest, remembered, "when the Christians were exhausted from war, God saw fit to send the Indians smallpox, and there was a great pestilence in the city...." The epidemic lasted a little over two months in Tenochtitlan. By 13 August 1521 when Cortes retook the capital, according to López de Gómez, "the enemy lost 100,000 men, or many more, according to others, but I am not including those who died of hunger and the pestilence... they [the defenders] slept among the dead and lived in a perpetual stench, for which reasons they sickened or were struck down by the pestilence, in which an infinite number died." Cortés himself, in a letter to the Emperor on 15 May 1522, linked the central Mexican epidemic and that of the Antilles. He wrote that many of the native leaders had died, as a consequence of the "smallpox distemper which also enveloped those of these lands like those of the islands."

One of those who died was the perceptive and capable Aztec ruler Cuitlahuac. Fernando de Alva Ixtlilxochitl wrote that "Cuitlahuac never did not rule more than 40 days, because he died from smallpox brought by a Black...." James Lockhart's translation of the event in the native source Anales de Tenochtitlan (the Codex Aubin) provides poignant testimony on the devastating event. "The tenth ruler was installed in Ochpaniztli, Cuitlahuatzin. He ruled for only eighty days; he died at the end of Quecholli [probably late November or early December of 1520] of the pustules, when the Christians were exhausted from the smallpox."

History Department doesn’t look back

Over the years, FIU’s History Department has quietly and consistently grown in size, scope and prestige into one of the finest small departments of history at a U.S. public university.

Over the past 10 years, the department — which has been in existence since FIU opened its doors in 1972 — has doubled from 11 to 22 faculty. The History doctoral program in Atlantic Civilization is now in its fourth year and is one of only two such programs in the nation (Johns Hopkins University has the other). Two of its faculty, Mark Szuchman and Joyce Peterson, are associate deans of the College of Arts and Sciences. And the department’s faculty are garnering more and more of the most distinguished awards in the field and are publishing books that are winning critical acclaim.

In 1997-98, a total of six books were published by members of the department, including major books by professors Daniel Cohen (The Female Marine: A New Edition With an Introduction), Noble David Cook (Born to Die: Disease and Conquest, 1492-1650), Alan Kahan (Alexis de Tocqueville, The Old Regime and the Revolution), Alexander Lichtenstein (Twice the Work of Free Labor: The Political Economy of Convict Labor in the New South), and Clarence Taylor (Knocking at Our Own Door: Milton A. Galamison and the Struggle for School Integration in New York City). Cohen won the prize for the best article published in the Journal of the Early American Republic and Victor Uribe won the Tibejar Prize for the best article published in the historical journal The Americas.

In terms of major grants during the past year, Taylor held a Fulbright Senior Lectureship in Germany, Felice Lifshitz conducted work in Germany under the auspices of the prestigious Humboldt Foundation, Lichtenstein received a fellowship from the National Endowment for the Humanities, and several faculty received grants from the FIU Foundation. This year, Joseph Patrouch is pursuing research in Austria on a Fulbright Fellowship, Cook is conducting research in Spain on an American Council of Learned Societies Fellowship, and Christopher Gray will be teaching in South Africa on a Fulbright Lectureship.

Several faculty also serve on the editorial boards of leading academic journals: Sherry Johnson with Cuban Studies, Howard Rock with Journal of the Early Republic, and Cook with Historica.

"What really attracted me to FIU was the quality of the history department," said William Walker, chair of the department, who came to the FIU in 1997 from Ohio Wesleyan University. "When I saw the quality of the faculty, I knew it was the place for me."

Walker believes that the only public universities that boast better departments are those significantly larger, usually with 40 to 50 faculty members. He pointed out that the department’s expertise has broadened considerably in recent years beyond the Latin American and Caribbean focus that was its traditional strength. Faculty who specialize in European and African history have been hired, and there are plans to recruit specialists in European women’s history and Asian history. He said the department is now working closely with the African-New World Studies Program and is increasing its offerings at North Campus with the hope of introducing a History major at the campus. 
Most people regard historians as introspective, bookish types who quietly dig into the past to help enlighten the present. But Cesar Becerra '95, FIU alumnus and Miami's youngest rising historian, seemingly defies that description as he boldly prepares for an epic adventure on the road...and beyond.

On Jan. 1, 1999, Becerra and his wife, Maud Dillingham, will depart from the FIU University Park campus for a one-year journey to all 50 states to take the pulse of the American spirit and psyche on the eve of the 21st century. Called "Motoring into the Millennium," the trip is being underwritten by corporate sponsors (which are still sought). This isn't the first time Becerra is marking a historical milestone; he has helped officially commemorate a number of recent anniversary celebrations, such as Miami's centennial, Everglades National Park's 50th anniversary and the 100th anniversary of the Spanish-American war (not to mention the 40th anniversary of Frankie's Pizza on Bird Road in Miami). But he's never undertaken a venture of the scope or implications of "Motoring into the Millennium." After all, it's an event that rolls around only once every 1,000 years. But he's approaching the venture with a spirit markedly different than most of the other millennium ballyhoo folks. In contrast to the Y2K (computer bug) or apocalypse alarmists, Becerra is genuinely optimistic about what he'll find on the road. And while his gregarious, upbeat nature is readily apparent, Becerra is not your road warrior type. Actually, his wife provided the inspiration for the trip. "When I met Maud I told her I'd never leave Miami. She was always a traveler and I told her, "Okay, Maud, we'll go travel. Let's go around the United States, we'll go to all 50 states." So she got more than she bargained for. It was a dream for both of us to see the entire country."

"Be careful what you wish for," quipped Dillingham.

The trip has been in the works for some two years and was first announced in their wedding invitation last year. In every state the couple plan to visit the capital, a high school and meet with the governor. They'll also be representing FIU throughout the country, and will be doing remote radio broadcasts via the FIU station (WUFI) every week. They've also organized a student art contest, and a "Class of 2000" essay and poetry contest in conjunction with the trek. After their return, the FIU library will present an exhibit of memorabilia collected on the trip.

The voyage will be made in one of Becerra's most prized possessions: his 1979 Chevrolet Malibu Classic station...
wagon. It served as the family mode of transportation for many years, and in 1990, just after his high school graduation, his father handed the keys over to Cesar. He has never let go of it since.

“My stubborn side would have to be my car,” he said. “I plan to have the old hunker forever.”

The old “hunker” has been emblazoned with artwork of the American flag, as well as the artwork of contest winners and logos of sponsors. “The car is like a moving billboard, a gallery on wheels,” he said.

And what do they expect to find on the road?

“We’re going to see what America is thinking about, what its future dreams are, what things are here that might not be here in the next century, places on the wayside that are decrepit and falling over. This project celebrates the defining technological invention of the 20th century: the automobile. Americans first saw the country with the automobile at the start of the century, so now we’re using the automobile to go out there and go see America again. ...We want to celebrate a wonderful century, an American century and kick off the new millennium. This is very much a positive and retrospective look at our past, our present and our future all wrapped into one.”

“We know we’re going to see the world completely differently when we get back,” Dillingham added.

They will share the ongoing progress of the year-long road trip through several media: a weekly, full-color newsletter (which will be mailed from each state) and a web site at www.intothemillennium.com. Both will include a running journal of the trip, surveys on millennium-related issues and other global millennium news. A variety of radio and television appearances will also take place throughout the trip. They plan to write a book about the trek, which will be well documented photographically (thanks to a $6,000 sponsorship by Phototek); he plans to shoot at least one roll of 36 exposures per day.

“Although this is calculated in terms of where we’re going, we don’t know who we’re going to meet, we don’t know what places we’re going to see or experience,” Becerra said. “As a historian, my first love was American history. ...We want to paint a full picture. We want to stay off the main highways as much as we can. We want to get off the beaten path. That’s the surprise of this trip.”
Come home to FIU

As we prepare for the next millennium and the University's second quarter-century, FIU proudly invites you to "come home" — join us for the next period in FIU's history.

FIU is definitely not the university of yesterday, but definitely one you can still be proud of (and brag about too)! Lately, alumni have been hearing a lot about history and FIU — that's because the FIU community (students, alumni, employees and friends) creates history just about every day. These are exciting times at FIU, and we want you, the proud graduates, to help us continue to make history.

Whether you are in Pittsburgh or Pinecrest, Kansas City or Kendall, now is the time to tune in and get connected with the latest at your alma mater. To those in South Florida, that might mean coming out for a few basketball games, using our great library facilities, enjoying the cultural offerings or attending an alumni reception, just to name a few. To those not so close to home, your support is just as important; sporting an FIU bumper sticker or license plate, supporting the Annual Fund, helping us build an alumni chapter through the Alumni Association, surfing our web page or visiting us for Homecoming week, are just as appropriate.

With the most exciting milestones yet on the horizon, this is the best time to come home. You can look forward to experiencing the excitement of our inaugural football season or championship banners in Golden Panther Arena. You can see the explosive growth on our campuses associated with our emergence as a research institution. And soon you'll be able to come home to an alumni house of your own on the University Park campus.

So there you have it. Coming home is as simple as that. In the near future you'll be hearing more about this invitation to "come home" from the offices of Alumni Affairs, University Advancement and Athletics. Take us up on the offer — you won't regret it. For information on how to reacquaint yourself with FIU, call 1-800-FIU-ALUM or e-mail us at alumni@fiu.edu.

Alumni turned out to commemorate FIU's 25th anniversary by serving as banner marshals at spring Commencement ceremonies. Pictured are (from left) Mary Witham '78, Sofie Durkee '90, MariaElena Miranda '88 '98, Alex Kapf '79 '98, Cheryl Messam '95 '98, Betty Hernandez '94, Irma Becerra-Fernandez '94, Latrell Myers '93, and Cesar Becerra '95.
**COMING HOME TO PANTHER PROWL 1999!**

<table>
<thead>
<tr>
<th>DATE</th>
<th>EVENT</th>
<th>TIME</th>
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<tbody>
<tr>
<td>Feb. 3</td>
<td>Panther Prowl Homecoming Comedy Kick-Off</td>
<td>8 pm</td>
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<tr>
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<td>(featuring a nationally known comedian)</td>
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<tr>
<td>Feb. 4</td>
<td>Alumni Association Awards Recognition Breakfast</td>
<td>8 am</td>
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<td></td>
<td>(special guest speaker to be announced)</td>
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<tr>
<td>Feb. 4</td>
<td>FIU Homecoming Lecture Series</td>
<td>8 pm</td>
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<tr>
<td></td>
<td>(nationally known speaker to be announced)</td>
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<tr>
<td>Feb. 5</td>
<td>Alumni Association Homecoming 1999 Golf Open</td>
<td>Noon</td>
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<tr>
<td></td>
<td>(afternoon tee-off, happy hour finish)</td>
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<tr>
<td>Feb. 6</td>
<td>FIU Come Home Community Day:</td>
<td>Noon</td>
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<td></td>
<td>Parade</td>
<td></td>
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<tr>
<td></td>
<td>Carnival Fun</td>
<td>1-5 pm</td>
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<tr>
<td></td>
<td>FIU Men's Basketball</td>
<td>5-7 pm</td>
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<tr>
<td></td>
<td>Panther Prowl Concert</td>
<td>8:30 pm</td>
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<tr>
<td>Feb. 9</td>
<td>FIU Women's Basketball</td>
<td></td>
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<tr>
<td></td>
<td>FIU vs. La. Tech (national champion runner-up!)</td>
<td>7:30 pm</td>
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<tr>
<td>Feb. 10</td>
<td>FIU Baseball: FIU vs. Miami (at FIU Baseball Stadium)</td>
<td>7 pm</td>
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COME BACK HOME FOR PANTHER PROWL 1999!

Greetings from your Office of Alumni Affairs! The old saying goes, "You can never go home again" — but don't tell that to the Alumni Association members, the Association Board of Directors or Alumni Affairs staff. Within 24 months, FIU will have an Alumni House on campus. This house will serve many purposes. First, it gives all alumni a place on campus they can consider home. Second, the house will be the center of alumni activity, including meetings, events, tailgate parties, alumni reunions and other traditional functions. Third, it will showcase the increased presence of alumni and the Association within the FIU community as well as the growing influence of FIU alumni in the external community. Finally, an Alumni House at FIU advances the development of tradition associated with great universities.

The fact that FIU, with support from alumni and friends, is building an Alumni House demonstrates that the University is here for the alumni. We want alumni to come to campus for plays, lectures, sporting events (FIU Football - Fall 2001!), continuing education — plus any other reason that will bring you back. Why? Because FIU is your alma mater. You selected FIU for various reasons, including quality of programs, price, proximity and availability of courses. If another institution of higher learning offered all these "perks," you might have attended that school. However, FIU was the right choice for you. Years have passed, and FIU doesn't look like the university you attended. New buildings are being constructed everywhere, new programs and social activities are being introduced, and the University is receiving increased positive national exposure. This is only the beginning.

FIU wants you to come back. We want all alumni back so we can show off the "new" FIU. Do you want a tour? Call 1-800-FIU-ALUM (348-2586) and schedule a tour with an Alumni Affairs staff member. You can't make it during the week? Come roller-blading or bike riding with other alumni, friends or your kids (future Golden Panthers) on weeknights or weekends. I assure you, you will be surprised. The development of this University can be a great source of pride for the entire community. Build your pride for FIU by taking the time to get reacquainted. Visit FIU's web site (www.fiu.edu), including our the Alumni Association homepage, or call a favorite professor or administrator. Invite someone from the community who does not know about FIU, to see both campuses. Come back for Homecoming 1999 (note: HOME-COMING says it all). Make time and visit your campus. Remember — you can come home again!

-Eduardo "Eddie" Hondal, Director, Alumni Affairs
STUDENT ALUMNI ASSOC. STRENGTHENS TIES TO FIU

Florida International University's Alumni Association is now reaching out to serve the needs of its future alumni: current students. The Association has named Sara Lipman, a former orientation director at FIU, as its new student programming coordinator. Lipman will work closely with Alumni Affairs to develop and enhance several programs essential to the advancement goals of the University, among them the further development of the Student Alumni Association (SAA).

The SAA aims to encourage students to form ties with alumni and to strengthen loyalty to the University through activities and exposure to the alumni chapter structure. SAA promotes campus activities, such as Homecoming, athletics, and alumni events. By promoting individual initiative, SAA develops future alumni leaders and increases the visibility of the Alumni Association and FIU.

SAA's projects for the upcoming year include a Mentor/Mentee Program, an FIU Fight Song Contest and Top 25 Graduate Awards. The Mentor/Mentee Program will link alumni and students in the same field of work and study. Alumni will serve as mentors to the students, giving them knowledge and guidance in their profession. The Top 25 Graduate Awards will focus on student recognition, with awards presented to seniors for academic excellence, leadership, school spirit, and other criteria.

SAA’s current major project is the Fight Song Contest. SAA will award a prize of $1,000 to students who create an original fight song for FIU. Administrators, professors, and alumni will serve on the selection team. This is a unique opportunity to create a tradition that will last for many years at FIU.

SAA understands that success of FIU and the Alumni Association begins with the students. The key to developing strong alumni is to develop strong student leaders. Students who are active usually take pride in the University and realize how their college experience has contributed to their personal and professional growth. The activities and initiatives planned by the SAA will help keep students connected to the University — both today and tomorrow — and to the Alumni Association.

If you would like to help the SAA, please call Sara Lipman at 1-800-FIU-ALUM.

LATAM NET ON-LINE BENEFIT

Latam Net has developed an outstanding program of basic Internet access and e-mail for FIU alumni.

"Internet access has been one of the most requested benefits. I know it will prove to be an excellent value-added program," said Ralph Cabrera '82, former president of the FIUAA.

The FIU Office of Alumni Affairs has already registered the following domain (fiualumni.org) and is ready to start accepting new users into the program. For rates and information, call 1-800-FIU-ALUM, or to sign up, call LatamNet Corporation at 305-477-9584.

Golden Panther fun in the sun

FIU'S SILVER ANNIVERSARY ALUMNI CRUISE '98

There was warm weather, tropical drinks, 11 meals per day (!), palm trees, ocean, sun tan lotion, nightly dancing, a private alumni reception, piano bar, comedy shows, musical shows, beach volleyball and much, much more in just three days. It was FIU's Silver Anniversary Alumni Cruise '98, held this past September.

"I truly enjoyed meeting new alumni and loved Cococay Island, especially the barbecue and boat ride. Hats off to the planning committee," said Margot Thomas '91.

The FIU Alumni Association's first travel event was a great success. Nearly 50 Golden Panthers cruised the Caribbean and enjoyed aspects of achievement, community service and FIU spirit.

To receive an award nomination application or to order tickets for the event (which will feature a prominent guest speaker), contact the Office of Alumni Affairs at 305-348-3334.
The cruise also had its share of glamour. The many pleasures that the Sovereign of the Seas had to offer.

"We saw alumni dancing, tanning, walking down the beach, enjoying the sights and, most of all, having a great time," said Emmy Arguelles '97, one of the hosts for the event. The Alumni Association's travel program, which is sure to become a tradition for years to come, has started off with a bang. Don't miss our Disney Cruise in August 1999!

ALUMNI TRIPS — INTO THE MILLENNIUM AND BEYOND!

The first alumni weekend cruise was a smashing success — and that trip was only the beginning! We have received requests from alumni throughout the country for a more extensive travel program. The Office of Alumni Affairs and the FIU Alumni Association would like to announce the following trips:

Disney Vacation
August 1999

Golden Panther Package
Two Days (Wednesday and Thursday) at any Disney Theme Park, includes hotel stay, with the FIU alumni group plus the weekend cruise on the Disney ship.

FIUAA Disney Theme Parks Package
Two Days (Wednesday & Thursday) at any Disney Theme Park, includes hotel stay.

Getaway Weekend with Disney Package
Weekend cruise with the FIU group on the Disney ship.

Millennium Weekend Cruise
December 31, 1999

This will be the party of the century — literally! What a better way to end and welcome millenniums than on a luxurious ship with parties all night! December 31, 1999 is on a Friday, and this alumni weekend cruise promises to be memorable. Details are currently being worked out. We will notify all Alumni Association members and Alumni Fund donors about this special weekend as the information becomes available. Hop aboard until the next century!

Viva la France! For skiing!
February - March 2000

For those of you who love to ski or love France, the FIU Alumni Association is planning a wonderful week of skiing in the nation's picturesque mountains. Details are currently being worked out for the packages, which will include round-trip tickets, seven-day hotel stay and ski lift tickets.

NEW GOLDEN PANTHER LICENSE PLATE

FIU is proud to introduce its newly designed state of Florida license plate, featuring the Golden Panther. Now you can sport the best looking new specialty tag in the Sunshine State. The new plates will be available in the spring.

Remember, the purchase of an FIU license plate provides FIU with funds ($25 per plate annually) that support scholarships and programs. The cost of the FIU plate is:

a) Switching a regular plate for an FIU plate during a tag non-renewal month: $45
b) Switching another specialty plate (manatee, other university, etc.) for an FIU plate during a tag non-renewal month: $20
c) Switching any plate for an FIU plate in your designated renewal month:
   • Tag Registration Price + $37 (first year)
   • Tag Registration Price + $27 (subsequent years)

UPCOMING ALUMNI EVENTS

December 5
FIU FAMILY DAYS at Parrot Jungle & Gardens

December 11
PRESIDENT'S HOLIDAY RECEPTION for members of the Alumni Association and/or Reunions for '72-'73, '77-'78, '82-'83, '87-'88, '92-'93, '97-'98.

FIU HOMEcoming
February 3
Opening Event: Panther Prowl Comedy Show

February 4
Third Annual Alumni Association Awards Recognition Breakfast
Homecoming Lecture
February 5
3rd Annual Alumni Homecoming Golf Open

February 6
FIU Community Day, Parade & Carnival Celebration, FIU Men's Basketball vs. Louisiana Tech

February 9
FIU Women's Basketball vs. Louisiana Tech

February 10
FIU Baseball vs. Miami Baseball

March (TBA)
BROWARD MEMBERSHIP EVENT on Lady Lucille
YOU HAVE BEEN A PART OF FIU HISTORY!

NOW RELIVE IT...

Celebrating Excellence, Creating Opportunity: A History of Florida International University chronicles FIU's development from an abandoned airport to one of America's most dynamic young public universities. It tells the story of the University's earliest beginnings through its formal establishment, opening in 1972, and the rapid growth and development of its first 25 years. It also relates the lives and visions of the people who made the University a reality and built it into what it is today. Celebrating Excellence, Creating Opportunity captures the spirit of Florida International University as it enters its second quarter-century.

For information or to order this 8.5" x 11" hardcover, limited edition, 120-page book with over 185 photographs—many never before published—with a full-color dust jacket, call the Alumni Affairs Office at 305-348-3334.

THIS IS YOUR CHANCE TO SHOW PRIDE IN THE PAST THAT YOU HELPED CREATE!