

*The Campaign for*



**FIU**

FLORIDA INTERNATIONAL UNIVERSITY



# PECTS IN ERING



**Gordon R. Hopkins**  
Dean  
College of Engineering

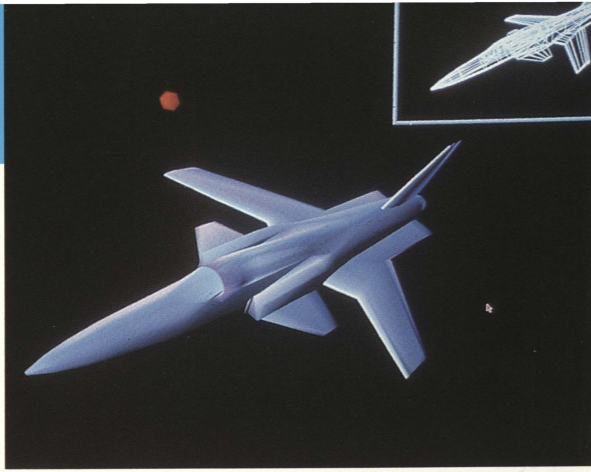
**Florida International University**  
Center for Engineering & Applied Sciences  
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**FLORIDA  
INTERNATIONAL  
FLORIDA**

*The Public University at Miami*

**Zully Dorr**  
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MIAMI



## FIU AT A GLANCE

**TYPE OF INSTITUTION:** Public, multicampus, research university; member, State University System of Florida.

**CAMPUSES:** University Park, in suburban Miami-Dade County; North Campus, on Biscayne Bay in northeast Miami-Dade County; academic sites in Davie, Fort Lauderdale, and Homestead.

**STUDENTS:** Approximately 30,000 students from 50 states and more than 110 foreign countries; 50 percent Hispanic, 14 percent black, 3.5 percent Asian, 7 percent international.

**PROGRAMS OF STUDY:** Nearly 250 baccalaureate, master's, and doctoral degree programs.

**ACADEMIC UNITS:** School of Accounting, School of Architecture, College of Arts and Sciences, College of Business Administration, School of Computer Science, College of Education, College of Engineering, College of Health Sciences, Honors College, School of Hospitality Management, School of Journalism and Mass Communication, School of Music, School of Policy and Management, School of Social Work, College of Urban and Public Affairs.

**STUDENT LIFE:** More than 200 student clubs and organizations, including student government, fraternities, sororities, and honor societies; also concerts, films, plays, lectures, ethnic festivals, and other events.

**ATHLETICS:** NCAA Division I; Sun Belt Conference; women compete in basketball, cross country, golf, soccer, softball, tennis, indoor and outdoor track and field, and volleyball; men compete in baseball, basketball, cross country, golf, soccer, tennis, and indoor and outdoor track and field.

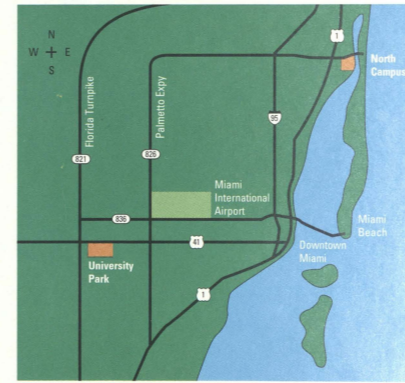
**COST:** On average, tuition and fees for a full-time, in-state student amount to \$823 per semester. For the 1998-99 academic year, credit-hour fees for undergraduates are \$68.73 per credit hour for Florida residents and \$290.53 per credit hour for out-of-state students. Tuition and fees are established by the State University System Board of Regents and are subject to change.

**FINANCIAL AID:** Undergraduates receive grants, scholarships, loans, and work-study on the basis of academic achievement and/or financial aid. During the 1997-98 academic year, more than 13,500 students received \$60 million in financial aid.

**CAMPUS HOUSING:** Student housing is available at University Park and North Campus in apartment-style accommodations ranging from one-person studios to four-person apartments. Two, three and four-person suites are also available at University Park.

**INQUIRIES, CAMPUS VISITS:** Office of Admissions, phone (305) 348-2363; fax (305) 348-3648; E-mail [admiss@fiu.edu](mailto:admiss@fiu.edu). Visit us at [www.fiu.edu](http://www.fiu.edu).

**TWO HOT LOCATIONS.** Whether your home base is our University Park Campus in suburban Miami or our North Campus on Biscayne Bay, you'll have access to cultural and recreational resources throughout the greater Miami area. University shuttle buses make frequent trips between the two campuses.



### WANT TO LEARN MORE?

For a full description of the general requirements for an undergraduate degree at FIU and the specific requirements for the undergraduate programs in the College of Engineering, please consult the University's Undergraduate Catalog by visiting our Web site at [www.fiu.edu](http://www.fiu.edu). Or, contact us at:

College of Engineering  
Florida International University  
Center for Engineering and Applied Science  
EAS 2460  
Miami, FL 33199  
Phone: (305) 348-2521  
Fax: (305) 348-1401  
E-mail: [info@eng.fiu.edu](mailto:info@eng.fiu.edu)

### LET US SHOW YOU AROUND.

If you'd like to visit FIU, please let us know. You can get in touch with us at the address below.

Florida International University  
Office of Admissions  
Charles E. Perry Building, Room 140  
University Park  
Miami, FL 33199-0001  
Phone: (305) 348-2363  
Fax: (305) 348-3648  
E-mail: [admiss@fiu.edu](mailto:admiss@fiu.edu)  
Web site: [www.fiu.edu](http://www.fiu.edu)

**TECHNOLOGY** IS THE FUEL THAT KEEPS OUR WORLD HUMMING. AND ENGINEERS ARE THE PEOPLE WHO APPLY TECHNOLOGY TO SOME OF OUR MOST COMPLEX PROBLEMS: DEVELOPING COMPUTER AND COMMUNICATIONS NETWORKS, REPAIRING OUR HIGHWAYS AND BRIDGES, DETERMINING THE EFFICIENT CONVERSION OF ENERGY, AND DESIGNING REPLACEMENT PARTS FOR HUMAN BODIES, TO NAME JUST A FEW. IN FACT, ENGINEERS LEAD THE LIST OF PROFESSIONALS WHO WILL BE MOST IN DEMAND IN THE 21ST CENTURY.

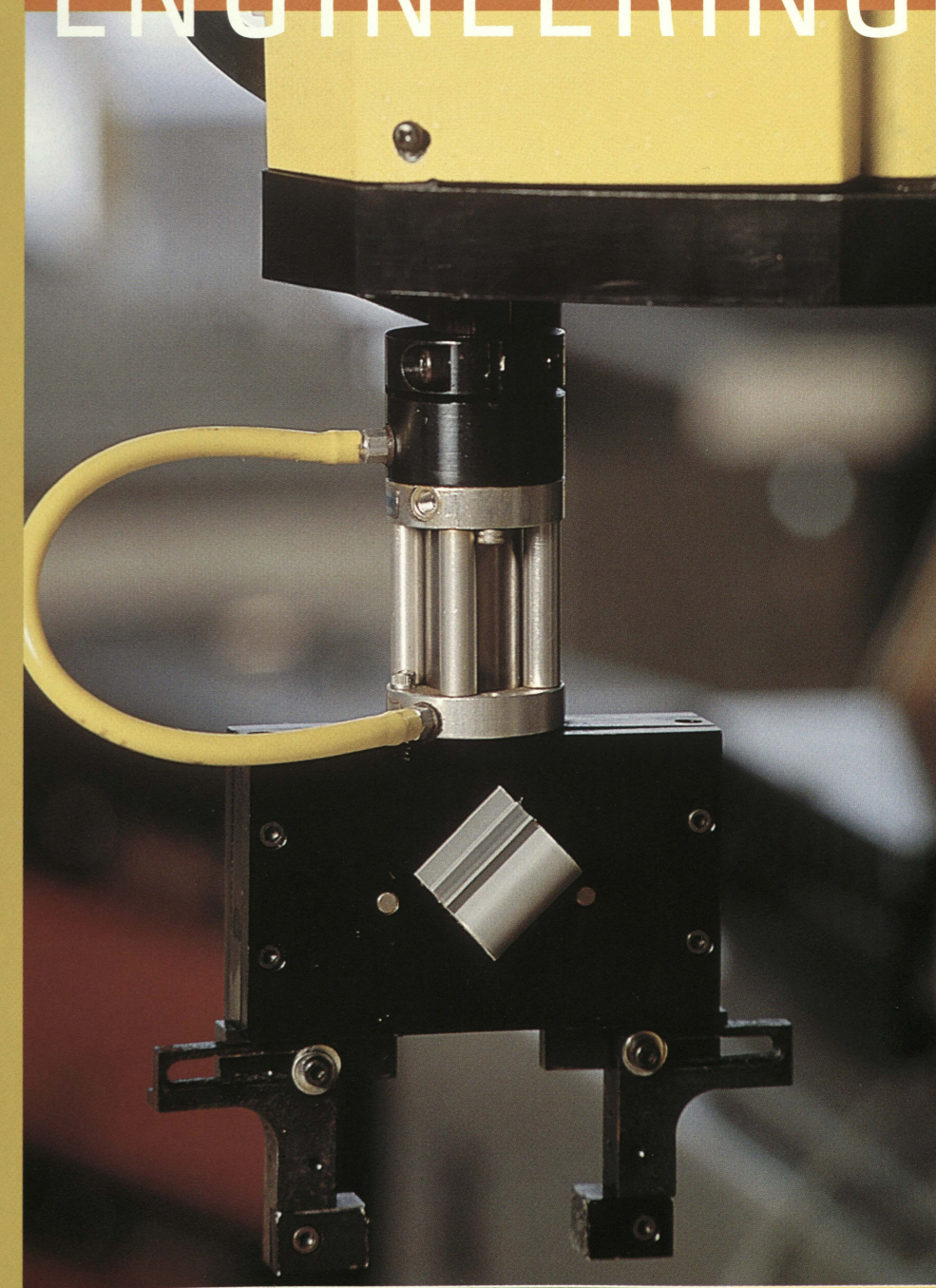
Florida International University educates engineers to take on the challenges—and enjoy the rewards—of a profession wide open for advancement. If you want to be on the cutting edge of change in the high-tech world, check out engineering. And come to FIU.

SOUTH FLORIDA'S FASTEST GROWING  
TEACHING AND RESEARCH UNIVERSITY



# HOT PROSPECTS IN ENGINEERING

FLORIDA INTERNATIONAL UNIVERSITY



MIAMI

## DEGREE PROGRAMS

- Chemical Engineering  
Bachelor of Science (BS)
- Civil Engineering  
Bachelor of Science (BS)  
Master of Science (MS)  
Doctor of Philosophy (Ph.D.)
- Computer Engineering  
Bachelor of Science (BS)  
Master of Science (MS)
- Construction Management  
Bachelor of Science (BS)  
Master of Science (MS)
- Electrical Engineering  
Bachelor of Science (BS)  
Master of Science (MS)  
Doctor of Philosophy (Ph.D.)
- Engineering Management  
Master of Science (MS)
- Environmental Engineering  
Master of Science (MS)
- Environmental and Urban Systems  
Master of Science (MS)
- Industrial and Systems Engineering  
Bachelor of Science (BS)
- Industrial Engineering  
Master of Science (MS)
- Mechanical Engineering  
Bachelor of Science (BS)  
Master of Science (MS)  
Doctor of Philosophy (Ph.D.)

### ACCREDITATION

All baccalaureate engineering programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET).

### SPECIAL PROGRAMS

Outreach programs for high school students, including Junior Engineering and Technology Society (JETS) and South East Conference for Minorities in Engineering (SECME).

PROFESSIONAL CERTIFICATE IN: Heating, Ventilation, and A/C Design.

THE ENGINEERING LEADERSHIP PROGRAM

THE NSF-FUNDED CENTER FOR ADVANCED TECHNOLOGY AND EDUCATION (CATE) PROVIDES A COMPUTING ENVIRONMENT CAPABLE OF ENGAGING RESEARCHERS AS WELL AS FACILITATING CLASSROOM AND LABORATORY-BASED INSTRUCTION. THE CENTER SUPPORTS, AMONG OTHERS, RESEARCH EFFORTS IN ROBOTICS APPLICATIONS.

## AN OVERVIEW OF UNDERGRADUATE PROGRAMS

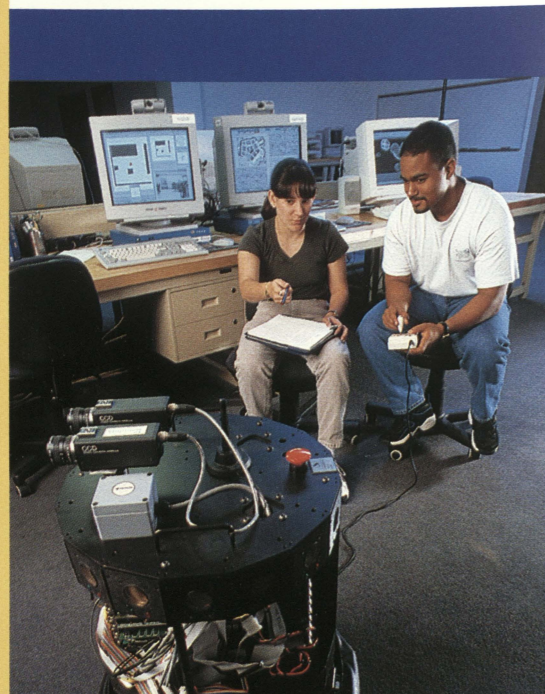
Undergraduates take about 25 percent of their course work in the College of Arts and Sciences—which gives them a good context for the technical side of engineering and a source for creativity. Each of the following undergraduate programs is also based on a strong foundation of engineering fundamentals.

- **CHEMICAL ENGINEERING** emphasizes research, development, design, and operation of processes and devices involved in chemical change. Graduates solve problems related to energy, food, pollution, biotechnology, and chemical processing operations.

- **CIVIL ENGINEERING** prepares students to design, plan, and construct the buildings in which we live and work; the roads, highways, and bridges upon which we travel; the transit and transportation systems we use; and much more.

- **COMPUTER ENGINEERING** combines work in digital electronics, computer programming, and software engineering. Students work on the cutting edge of computer communications, image processing, and biomedical computer applications.

- **CONSTRUCTION MANAGEMENT** gives students the knowledge and skills they need for managerial positions in the construction industry. Graduates work



as construction superintendents, project managers, project schedulers, cost estimators, quality controllers, or owners of their own businesses.

- **ELECTRICAL ENGINEERING** combines study of the traditional areas of circuits, electronics, power, and electromagnetics with courses emphasizing new developments in microelectronics and computers.

- **INDUSTRIAL AND SYSTEMS ENGINEERING** is concerned with integrated systems of people, machines, and computers. Industrial engineers specify, predict, and evaluate systems. Settings include industry, manufacturing, health care, education, government, and financial centers.

- **MECHANICAL ENGINEERING** emphasizes research, design, development, testing, control, and manufacture in diverse fields, from biomedical systems to manufacturing. Mechanical engineers play a major role in the national space program, energy use and conservation, transportation, and the automotive field.

## ADVANCED DEGREE PROGRAMS

In addition to the degree programs described above, the College of Engineering offers several master's and doctoral degree programs. The benefits to undergraduates are obvious—from sharing faculty members with graduate students to having access to state-of-the-art facilities. And after graduating

with an FIU bachelor's degree, many eventually return to FIU to continue their engineering education.

## A FACULTY ON THE CUTTING EDGE

Our engineering faculty members have earned doctoral and professional degrees from such institutions as Harvard, Penn, MIT, the University of Florida, and the Georgia Institute of Technology. They also have strong ties to industry—and provide consulting services to national and international corporations and organizations.

All departments in the College have their particular areas of concentration for research. At FIU, you can expect research to be a part of your engineering education. The following examples give you an idea of what our students and faculty are working on.

### CIVIL AND ENVIRONMENTAL ENGINEERING

- vibration and impact analysis of steel and concrete bridges
- comparisons of steel column design
- international housing planning and construction
- application of genetic algorithms to truss configuration design analysis of intermodal guideway transit systems
- water, air, and soil quality
- hazardous and radioactive material management and treatment technologies applied to pollution control, prevention, cleanup, remediation, and restoration



### ELECTRICAL AND COMPUTER ENGINEERING

- computer-managed multimedia systems
- computer vision
- image processing, electromagnetic compatibility techniques, nuclear detectors, and sensors
- power systems operations and control
- artificial intelligence application to power systems
- quantum noise in solid-state devices, and biomedical signal processing
- neural networks
- wavelet integrated systems, and development of laser diode optical sources
- computer networking

### INDUSTRIAL AND SYSTEMS ENGINEERING

- material handling
- safety engineering
- occupational biomechanics
- queuing modeling
- CAD/CAM systems integration
- concurrent engineering
- applied AI/expert systems
- manufacturing systems design
- manufacturing automation
- production planning and control
- machine control and robotics
- computer simulation
- mathematical programming
- engineering economic modeling
- human/computer interaction
- reverse engineering
- quality engineering

### MECHANICAL ENGINEERING

- thermal/fluid science
- environmental waste management
- CAD/CAM/robotics
- biomedical and manufacturing
- studies in materials science and solid mechanics (including courses in Electronic Packaging, Microelectronics, Finite Element Analysis, and Biofluid Mechanics)

### CONSTRUCTION MANAGEMENT

Diverse research funded by the National Science Foundation, the Building Construction Industry Advisory Board, the American Association of State Highway and Transportation Officials, the U.S. Air Force, and others.

## FIU RESEARCH CENTERS

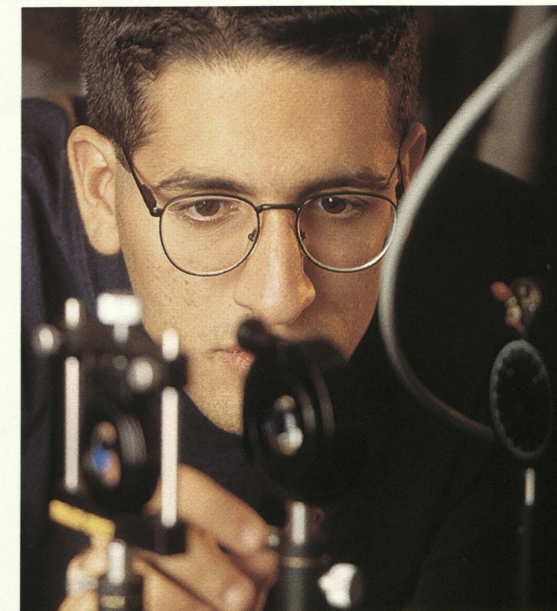
Our centers of research excellence give you the chance to get hands-on experience and put theory to the real test. They include:

- Center for Advanced Technology and Education (CATE)
- Water Research Center (WRC)
- Future Aerospace Science and Technology Center for Cryoelectronics (FAST)
- Manufacturing Research Center (MRC)
- Hemispheric Center for Environmental Technology (HCET)
- Lehman Center for Transportation Research (LCTR)

Other facilities include the Engineering Information Center (EIC) and the Multimedia Development and Advanced Applications Training Laboratories.

## HOT PROSPECTS

Thanks to a wide-open job market and FIU's high profile in the engineering world, our graduates are in demand. Recent graduates are working in private industry with international companies such as Lucent Technologies, Motorola, and Ford. Some are pursuing advanced degrees in engineering at the University of Florida, Georgia Institute of Technology, and MIT, to name a few. Our students have also used engineering as a springboard to programs and careers in law and medicine.



THE BIOMEDICAL ENGINEERING INSTITUTE

AT

FLORIDA INTERNATIONAL UNIVERSITY



A PROPOSAL TO THE  
COULTER FAMILY  
AND THE  
WHC TRUST





# BIOMEDICAL ENGINEERING INSTITUTE

# FIU

## Biomedical Engineering Education & Research for South Florida

The College of Engineering at Florida International University will in 1999 inaugurate an institute that will advance biomedical engineering education and research in South Florida and prepare professionals for the evolution of the biomedical industry through the 21st century.

THE BIOMEDICAL ENGINEERING INSTITUTE will unite the academic, industrial, and clinical sectors in the development of a new and innovative biomedical engineering program. The Institute will provide the infrastructure and interdisciplinary environment in which engineering students will closely interact with a diverse group of faculty, clinicians, and industry professionals in preparation for careers in the biomedical engineering industry.

Initial funding for the Institute is made possible by a \$1 million grant from The Whitaker Foundation. Through its Special Opportunity Program, the foundation is providing support for the infrastructure that will allow the University to accelerate the implementation of the biomedical engineering degree and create a new national model for the implementation of biomedical engineering programs in cooperation with universities, industry and community hospitals.

The Biomedical Engineering Institute will be home to the only public biomedical engineering program in South Florida. It will produce a new breed of engineers for the biomedical industry, support the activities of local industry, and contribute to the region's economic development.

The Institute will house the biomedical engineering academic program, a biomedical engineering research center, and an industrial and clinical partnership development program. These are described on the following pages.

## THE ACADEMIC PROGRAM

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The biomedical engineering academic program was designed in collaboration with the FIU Biomedical Engineering Industry Advisory Board and aims to deliver an engineering professional proficient in clinical and industrial environments and knowledgeable about the full product cycle, from basic research to clinical implementation.

This program will serve as a key educational component of the economic development plan for South Florida. It will educate students from the community for the community. As the leading producer of engineers in South Florida, the College of Engineering awards an average of 250 degrees every year. Of the students who receive an engineering degree from FIU, over 75% come from South Florida and more than 65% remain in the area as professionals upon graduation.

The academic program will offer three options:

1. **A COMBINED BS/MS IN BIOMEDICAL ENGINEERING PROGRAM** that will award a baccalaureate degree in chemical, computer, electrical, or mechanical engineering and a master in biomedical engineering. This five year program integrates biological sciences and biomedical engineering courses within the undergraduate degree to prepare the student for the graduate program.
2. **A MASTER OF SCIENCE IN BIOMEDICAL ENGINEERING PROGRAM** that will offer two tracks, one for professionals in industry and another for researchers and students aspiring to a doctoral degree. The professional track will have courses in life sciences, biomedical engineering, and engineering management. This track will require a capstone project for the thesis and offer specialization options in device manufacturing, medical instrumentation, and biomaterials. The research track was designed along the lines of a traditional degree program and is a foundation for doctoral studies.
3. **A GRADUATE ENGINEERING CERTIFICATE PROGRAM** that will provide courses on cardiovascular engineering instrumentation and devices for students already holding an engineering degree but desire a focused and compact biomedical engineering concentration. The courses in the certificate program can be transferred to the graduate program should the student decide to pursue a graduate degree.



The curriculum for the degree programs was developed in collaboration with the industrial and clinical sectors. Unique to the program is a course that includes a clinical rotation at Baptist Hospital and the Miami Cardiac and Vascular Institute. The clinical rotation will introduce the students to applications and problems associated with the use of medical devices and instruments in clinical medicine. Through this course, biomedical engineering students will be given the foundation to recognize the importance of designing products with the user in mind: the patient, doctor, nurse or technician. Another unique element in the curriculum is a required industry internship for students enrolled in the combined BS/MS program. This industry internship is scheduled during the 4th and 5th years to expose the student to practical experience while in the program.

## **THE CARDIOVASCULAR ENGINEERING CENTER**

The Institute will also house several biomedical engineering research centers. Its first, the Cardiovascular Engineering Center, will unify the efforts of the academic, industrial, and clinical sectors in advancing cardiovascular engineering science and technology. Established with an initial university budgetary commitment equivalent to the earnings of a \$6 million endowment, this center was specifically designed to support the biomedical industry in South Florida and the \$3.1 trillion world market for cardiovascular devices and instrumentation. Underlying the mission of the Center is a multidisciplinary aim to significantly increase the speed and effectiveness of the transfer of basic and applied research to practical application in a concerted effort to produce much needed advances in medicine and healthcare. In addition to its research efforts and collaboration with industry and clinical partners, the Center will serve as the research component of the biomedical engineering academic program and contribute content for biomedical engineering education and training in South Florida.

## **THE INDUSTRY AND CLINICAL PARTNERSHIPS**

The third element of the Biomedical Engineering Institute will be the establishment of partnerships and collaborative projects with industrial and clinical sectors. Through the Institute, this partnership will support special professional development programs and to provide research and development support to start-up biomedical engineering companies in South Florida.

## **INVESTING IN BIOMEDICAL ENGINEERING EXCELLENCE**

### Advancing Biomedical Engineering Education and Research in South Florida

Florida International University requests that the Coulter family and the WHC Trust consider a joint grant of \$5,000,000 to the College of Engineering to establish an endowment in support of the Biomedical Engineering Institute. The grant will qualify under the Trust Fund for Major Gifts Program of the State University System of Florida for a 100 percent match and create a final endowment of \$10,000,000.

This will be the most significant grant for the College of Engineering during The Campaign for FIU and one of the most significant for the University. More important, however, is the impact it will have on the South Florida community by advancing biomedical engineering education and research in the region.

In recognition of this grant, FIU would like to name the Biomedical Engineering Institute in honor of Wallace H. and Joseph R. Coulter, as a tribute to their contributions to society and to preserve the values on which they based their success.

It will be an honor for FIU to have the Coulter family name associated with this biomedical program and continue their ideal of Science Serving Humanity through the successful education and research efforts of the Biomedical Engineering Institute.

FIU has allocated space and facilities for the Biomedical Engineering Institute within the new Center for Engineering and Applied Sciences. The University proposes that the joint grant from the Coulter family and the WHC Trust be solely used to support program development.

An investment in the FIU Biomedical Engineering Institute is an investment in the South Florida community and its biomedical industry. The \$10,000,000 endowment established by this grant will secure the future of biomedical engineering education and research in South Florida. It will enable the University to build excellence in biomedical engineering upon the framework established by the grant from The Whitaker Foundation and the State of Florida by providing a permanent funding source in support of 9 strategic components. The combination of these strategic components will elevate the region's biomedical engineering activity to levels of national prominence.

#### **EMINENT SCHOLARS CHAIR IN BIOMEDICAL ENGINEERING**

**\$2,000,000**

This prominent academic appointment will attract nationally recognized talent to the program and bring to the biomedical education and research activity in South Florida. The eminent scholars chair in Biomedical Engineering will conduct research at the Cardiovascular Engineering Center and participate in the academic program. Created with a \$2 million endowment, the eminent scholars chair will be the most prestigious eminent scholars chair endowed during The Campaign for FIU.

#### **BIOMEDICAL ENGINEERING DISTINGUISHED PROFESSORSHIP IN BIOINSTRUMENTATION AND BIOMEASUREMENT**

**\$1,000,000**

A \$1 million endowment to support a prestigious faculty research appointment in instrumenta-

tion for blood cell and particle analysis. The professorship will enable the Institute to focus on medical instrumentation research and highlight a specific area of specialization.

● **BIOMEDICAL ENGINEERING EXCELLENCE FUND** **\$2,000,000**

For the Institute to enjoy success it must be interdisciplinary in nature and capable of attracting the best faculty to direct its teaching and research effort. The BME Excellence Fund will be an investment in professorships to assist the Institute in leveraging state-funded faculty salaries and start-up funds as the means to provide the necessary incentives to compete for and attract the best and brightest talent.

● **YOUNG INVENTOR PROGRAM** **\$1,500,000**

Our nation's research is guided by government interests and often denies young inventors the opportunity to explore creative ideas. Through an annual competition, the YIP will provide young inventors the opportunity to explore their own ideas. Recipients of the YIP award will receive a stipend, space, and resources to support a project. The YIP has been designed to inspire innovation and promote entrepreneurial spirit, and the vision that South Florida start-up companies will reach global status and prominence.

**GRADUATE FELLOWSHIPS IN BIOMEDICAL ENGINEERING** **\$1,000,000**

Graduate Fellowships in Biomedical Engineering will enable the Institute to award prestigious fellowships to graduate students. These graduate fellowships will provide the Institute with the resources to recruit outstanding student talent and promote graduate education. Earnings from the \$1 million endowment will initially sponsor 3 fellows.

**BIOMEDICAL ENGINEERING RESEARCH INITIATION PROGRAM FUND** **\$1,000,000**

Established with a \$1 million endowment, this fund will provide initial support to advance projects in the early stages of basic and applied research to the more developed levels required to secure funding by government agencies, prestigious foundations, and industry. The Biomedical Engineering Research Initiation Program will award grants to faculty through an annual competition and monitor progress and success through a yearly review process.

**BIOMEDICAL ENGINEERING SCHOLARSHIP** **\$500,000**

Created with a \$500,000 endowment, this scholarship fund will be used by the Institute to recruit and retain outstanding undergraduate students. The earnings from the endowment will initially support 8 scholars.

**CARDIOVASCULAR ENGINEERING CENTER PROGRAM FUND** **\$500,000**

Established with a \$500,000 endowment, this program fund will supplement the Center's operating budget, enhance its publications, produce seminars, and support biomedical outreach activity.

● **LECTURE/SYMPOSIUM SERIES** **\$500,000**

Oriented to address challenges in biomedical engineering, this series will bring expert guest lecturers from academia, industry, and the clinical sectors to South Florida as part of program development to support industry and enhance education and training programs. The lecture/symposium series will be open to industry and academia, and will be published annually by the BMEI.

## THE CARDIOVASCULAR ENGINEERING CENTER

THE CARDIOVASCULAR ENGINEERING CENTER will concentrate its research efforts on design, development, and enhanced implementation of diagnostic, interventional, therapeutic, and replacement systems and devices associated with the cardiovascular and blood systems. Faculty from the College of Engineering, the College of Health, and the Department of Biological Sciences will collaborate on research efforts in the Center with scientists, physicians, and biomedical engineers from industry.

THE CARDIOVASCULAR ENGINEERING CENTER will have the distinct role of educating biomedical engineering professionals and preparing a workforce for the biomedical industry. It will provide research opportunities for students in the academic program and allow them to participate in research assignments in a multidisciplinary environment with faculty, industry engineers, scientists, and clinicians.

Unlike traditional research centers that focus on basic/theoretical research and operate in academic environments, THE CARDIOVASCULAR ENGINEERING CENTER will support the applied research interests of the industrial and clinical sectors and operate in an industrial environment. This real-world experience will better prepare students in the program to succeed as professionals upon graduation.

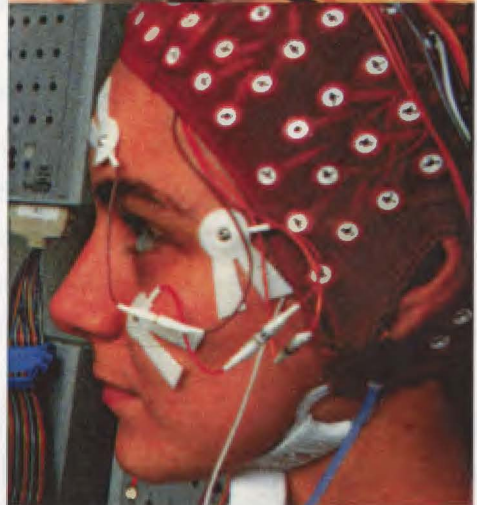
THE CARDIOVASCULAR ENGINEERING CENTER will conduct research in:

- biofluid and biosolid mechanics
- experimental, mathematical and computational modeling
- biomaterials
- artificial heart valves, cardiovascular devices and instrumentation
- bioimage, signal processing and diagnostic imaging

THE CARDIOVASCULAR ENGINEERING CENTER will house laboratories for:

- Biomedical Instrumentation and Devices
- Blood Flow Analysis
- Computer Modeling
- Nuclear Imaging and Diagnostics
- Cardiovascular Experimental Modeling
- Molecular and Cellular Biology
- Cardiovascular Biomaterials and Biocompatibility
- Ultrasound Technology

The Center will interface with two other facilities in the College of Engineering: the Manufacturing Research Center (MRC) and the Center for Advanced Technology in Education (CATE). The MRC will provide rapid prototype manufacturing capabilities and extend these to the biomedical industry. CATE will support on research involving computer imaging utilizing its high performance computer facilities and software engineering capabilities. These two centers will join THE CARDIOVASCULAR ENGINEERING CENTER in supporting the research and development efforts of start-up biomedical engineering companies.





**FLORIDA INTERNATIONAL UNIVERSITY** is one of America's most dynamic and fastest growing universities. Since opening in 1972, FIU has achieved many benchmarks of excellence that have taken other universities more than a century to reach. The University has a nationally renowned full-time faculty, known for their outstanding teaching and cutting edge research. FIU currently enrolls more than 30,000 students from throughout the U.S. and 110 foreign countries, and has graduated 80,000 alumni, who have risen to prominence in every field and are a testament to the University's academic excellence.

A member of the State University System of Florida, FIU is a doctoral granting, public, multi-campus institution offering a diverse selection of undergraduate, graduate and professional programs. Through its 15 colleges and schools, FIU offers nearly 250 baccalaureate, master's, and doctoral degree programs, conducts basic and applied research, and provides public service. Committed to both quality and access, FIU meets the educational needs of traditional students as well as the increasing number of part-time students and lifelong learners. Research and teaching, to address economic and social concerns, are conducted by interdisciplinary centers and institutes at the University.

FIU is the largest public university in South Florida. For the past three years, FIU has been among the top 100 public national universities (and top 150 public and private) in the U.S. News & World Report annual guide to "America's Best Colleges." FIU was the youngest institution in the group. The magazine has also recognized the University as a "best buy" in higher education, reporting that FIU students are among the least indebted college students (fifth) in the nation.

## COLLEGE OF ENGINEERING

The College of Engineering at FIU is South Florida's premier engineering education source, and the state's 4th largest engineering program. Founded just 15 years ago, the College has a remarkable record of growth and accomplishment in education, service and research.



The College resides in the new Center for Engineering and Applied Science, a 245,000 square-foot commercial research facility located on the new 36-acre Engineering Campus. Its academic program offers degrees in civil, chemical, environmental, electrical, computer, industrial and mechanical engineering. Degrees through the doctoral level are offered in electrical, civil, and mechanical engineering. The College will introduce a new program in Biomedical Engineering in the 1999-2000 academic year.

The College of Engineering educates the engineers from South Florida for South Florida. The College enrolls just over 2,000 students and awards an average of 250 engineering degrees a year. The majority of its student population, a remarkable 80%, lives within 50 miles of the institution, and over 65% remain in the area upon graduation.

The College of Engineering contributes almost half of the research funding awarded to FIU and is home to the most productive engineering research program in the State of Florida. Since 1992 the College has received more than \$4 million in funding for biomedical engineering research, and its faculty have authored more than 80 publications in this field.

Through the community outreach efforts of the College, FIU ranks first in the country in conferring engineering degrees to Hispanics and in engineering enrollment of minorities. The College is also involved in programs that extend university-level engineering courses and credits to many local high schools in an effort to promote engineering within the community and prepare students for a career.

## FIU BIOMEDICAL ENGINEERING INDUSTRY ADVISORY BOARD:

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Althin Medical, Inc.  
Beckman Coulter Inc.  
Boston Scientific Corp. / Symbiosis Division  
Cordis Corp. / Johnson & Johnson  
World Medical Manufacturing Corp.  
Syntheon Corp.

## PROGRAM PARTNERS:

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Miami Cardiac and Vascular Institute  
Baptist Hospital of Miami

## CONTACTS:

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# BIOMEDICAL ENGINEERING INSTITUTE



Biomedical Engineering Education & Research

A joint grant from the Coulter Family and The Whitaker Foundation  
Biomedical Engineering Institute at Florida International University



**\$10 MILLION**

**\$6 MILLION**

**\$6 MILLION**

**E**

# BIOMEDICAL ENGINEERING INSTITUTE



# FIU

Biomedical Engineering Education & Research for South Florida

A joint grant from the Coulter Family and The WHC Trust will establish an **\$22 MILLION** Biomedical Engineering Institute at Florida International University based on the following funding elements.



**\$10 MILLION**

## ENDOWMENT GRANT FROM THE COULTER FAMILY AND WHC TRUST

\$5 million grant from the Coulter Family and The WHC Trust to endow programs in the Biomedical Engineering Institute, leveraged by a \$5 million match from the State of Florida.

**\$6 MILLION**

## ENDOWMENT EQUIVALENT FROM THE WHITAKER FOUNDATION

The annual appropriation of a \$1 million grant over 3 years is equivalent to the spendable earnings of a \$6 million endowment.

**\$6 MILLION**

## ENDOWMENT EQUIVALENT FROM FIU

A \$300,000 annual budgetary commitment awarded to the Cardiovascular Engineering Center by FIU's Quality Improvement Program Competition. It is the equivalent of the spendable earnings from a \$6 million endowment.



# THE WALLACE H. AND JOSEPH R. COULTER CARDIOVASCULAR ENGINEERING CENTER

## INITIAL EQUIPMENT CAPABILITIES

### **BLOOD ANALYSIS**

Flow Cytometer  
donated by Coulter Corp.  
Confocal Microscope  
Coulter Counter  
donated by Beckman Coulter Corp.

### **COMPUTER MODELING**

SGI Origin 2000 High Performance Server  
SGI workstations  
Fluid and Solid Modeling Software

### **CARDIOVASCULAR EXPERIMENTAL MODELING**

Vitro Systems Cardiovascular Simulator  
Arterial Flow Models

### **FLOW AND PRESSURE MEASURING EQUIPMENT**

Catheter-Tipped Pressure Transducers  
Electromagnetic Flow Meter and Probe  
Ultrasonic Flow Meter and Probe  
Dantec Particle Image Velocimetry System

### **MOLECULAR AND CELLULAR BIOLOGY**

Clean Room  
Equipment for Growing and Harvesting Endothelial Cells

### **ULTRASOUND RESEARCH**

Research Based Ultrasound Beam Former, Doppler Board, and Motion Device  
Commercial Duplex Clinical Ultrasound Machine for Imaging and Flow Measurement

### **NUCLEAR IMAGING AND DIAGNOSTICS**

Packard Instruments Gamma Counter  
Ionization Chamber  
Lead Shielding And Other Safety Equipment  
Gamma Camera  
donated by Baptist Hospital

