

the Pinnacle

Building Your Future at FAU

WELCOME: MESSAGE FROM THE DEAN



COLLEGE OF ENGINEERING
& COMPUTER SCIENCE
Florida Atlantic University

Welcome to our College of Engineering and Computer Science! Many exciting and fascinating developments have occurred within the last several months. We are delighted to provide highlights of the programs and opportunities that are available to our current and prospective students. In addition, we have also included information about admissions and financial aid. Hopefully, this will help you as you navigate your way around FAU. The College of Engineering and Computer Science is committed to student success. As you read through *The Pinnacle*, you will find out more information about the academic support services that we offer.

We are pleased to announce two new graduate programs for 2007. The first—a master’s degree program in Bioengineering—began this spring; the second program, in Systems Engineering, is slated to launch this fall.

Groundbreaking research is a major component of the college mission. Currently, our Department of Ocean Engineering is developing an ocean platform that will provide a port—or seabase—for the U.S. military (see page 2). Two engineering graduate students under the guidance of electrical engineering professor, Dr. Daniel Raviv, and with the help of inventor Michael Levine, developed a new, low cost, desalination method to produce clean water using a process that is estimated to be 10 times more efficient than existing technologies. These outstanding researchers and their project earned finalist honors in the National Collegiate Inventors Competition of the National Inventors Hall of Fame (see page 3).

We are in the process of selecting an architect/engineer and construction management services for our new building, which will provide greatly expanded work and study facilities for our students.

We look forward to working with you as you explore all that the College of Engineering and Computer Science has to offer. Join us in our extraordinary journey wherein new ideas create new opportunities!

Karl K. Stevens, Ph.D., P.E.
Dean



ENGINEERING RECEPTION / OPEN HOUSE

As you venture to the next stage of your academic journey, you are faced with many choices as to where to continue your studies. Deciding on a university at which to pursue your bachelor’s degree can be a rather challenging decision, especially today, with so many options available.

Twice a year, in the fall and spring, we host a College Reception/Open House. This event provides students with information on what our programs have to offer and showcases exciting student projects, such as the human-powered submarine and the formula one race car. You will have the chance to learn more about the services we offer—including a free tutoring program and scholarship and internship opportunities—and meet with advisors from all the departments.

If you are interested in the FAU engineering or computer science programs, this is definitely the event for you! Call (561) 297-2049 or e-mail adrienne.simmons@fau.edu for more information. Hope to see you there!



WE ARE HERE TO HELP YOU!

Ready to be an FAU engineering or computer science student but not sure where to start? The Division of Engineering Student Services (DESS) is here to help! We are happy to talk to you and answer any questions you may have. Maybe you would also like to schedule an appointment to meet with an advisor to receive further information about our programs. Anything you need, any questions you have, feel free to call (561) 297-2780.



JOINT B.S./ M.S. DEGREE PROGRAM

As you work towards that Bachelor's Degree, you have probably found yourself thinking about attending graduate school one day. Not so sure you will have the time to devote to attaining a graduate degree? Well, FAU may just be the place for you! The College of Engineering and Computer Science is very pleased to announce the introduction of the joint Bachelor of Science (B.S.)/Master of Science (M.S.) Degree Program. This program is now available to our Engineering and Computer Science students and provides them the opportunity to take nine credits of graduate level courses while working on their undergraduate degree. These nine credits will count towards both the Bachelor's and Master's Degree. Some graduate research and teaching assistantships will also be available on competitive basis for this new program every semester. To receive further information about this program and its requirements, please call (561) 297-3400.

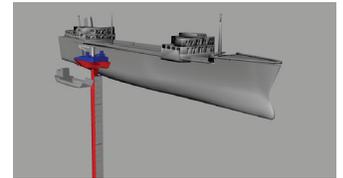
OCEAN ENGINEERING TO DEVELOP A PLATFORM TO PROVIDE SUPPORT FOR A FUTURE SEABASE

Imagine being in a ship 100 miles from enemy shores in the middle of high seas with no safe harbor. Soon there will be a safe-harbor—an innovative “base at sea” is being developed to assist the military in establishing such a sea-based center for foreign missions.

SeaTech, FAU's Institute for Ocean and Systems Engineering located in Dania Beach, was recently awarded a \$2 million grant from the Office of Naval Research to investigate, design and build a rapidly deployable, stable multi-mission platform. The concept for the platform began in 2003 as a student project that involved developing a possible solution for at-sea, ship-to-ship transfers in high

seas. Such transfers will be required by the Navy to enable combat operations from a mobile at-sea base when use of a land base is not possible. It is extremely difficult to deliver huge amounts of supplies needed to set up a military operation without access to ports or harbors. The platform being developed will aid in the delivery of such supplies, acting as a crane ship, and making it possible to transfer supplies from larger ships to smaller ones. The platform can also act as a landing, takeoff and refueling site for helicopters involved in at-sea operations.

Dr. Frederick Driscoll, associate professor in Ocean Engineering and principal investigator of this project, will lead a team of



researchers from FAU, two Navy laboratories and industry partners, Ocean Engineering International and Marine Applied Physics Corporation. Dr. Driscoll expects to have a prototype of the sea platform completed by August 2008. Dr. Manhar Dhanak, director of SeaTech, chair of the Department of Ocean Engineering and co-principal investigator of the project stated, “This project shows how from an educational effort you can build something that is going to be of great utility 10 to 15 years down the road. It's a great sense of achievement.”

FAU ON THE FAST TRACK

In May 2006, FAU's Formula SAE (Society of Automotive Engineers) Team entered the International Formula SAE Competition in Romeo, Michigan. Over 120 universities participated in this international competition which designed, fabricated, and competed with small formula-style race cars. In a competition where more than half of the cars were unable to complete all seven events, the FAU car finished each event, including

endurance-economy, auto-cross, skid-pad, acceleration, presentation, cost and design. The team placed 53rd in the overall competition and defeated schools such as MIT, Georgia Tech and Virginia Tech in the acceleration and endurance events.

The FAU race team modified a Suzuki GSX-R 600 motorcycle engine. The estimated maximum speed of the car is 130 mph. The engine delivers 94 horsepower to the rear wheels.



“We are very proud of the FAU Racing Team,” said Jason Bivens, the 2006 team leader. “The design process has begun for fielding another car within the next two years at the international competition. Our team goal is to score within the top ten.”

FAU COMPETES IN THE “OLYMPICS OF COMPUTER PROGRAMMING”

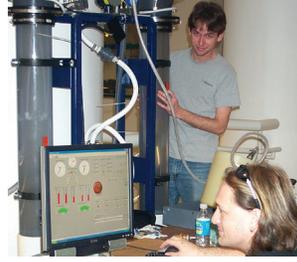
The Association of Computer Machinery (ACM) held its annual programming competition on September 19, 2006, at FAU. The winner of the local competition was Richard Kaufman, a junior majoring in computer science. The competition is judged on speed and how many computer problems are solved accurately.

About 25 students competed on the local level and nine were selected in teams of three to represent FAU at the 31st ACM Southeast USA

Programming Contest in October at Georgia Southern University. The competition was sponsored by IBM and according to Dr. James K. Harris, the contest's regional director, is the “Olympics of computer programming and attracts some of the best and brightest computer science programmers.” This was the 5th year that FAU has participated in the regional competition and represented the largest number of teams FAU has ever sent. Our premier team,

The Fighting Owls, defeated teams from the University of Florida, Georgia Tech, Florida State University and Auburn among others. FAU's ACM Team Coach Liam Mayron stated, “The regional competition is an excellent showcase of the quality of our students and the most important strategy for the competition is how the team works together.” It was a great experience for all who participated.

ELECTRICAL ENGINEERING GRADUATE STUDENTS DEVELOP A SOLUTION FOR GLOBAL WATER SHORTAGE



An engineering team at Florida Atlantic University has developed a new, low cost, desalination method to produce clean water using a process that is estimated to be 10 times more efficient than existing technologies.

Brandon Moore and Eiki Martinson, graduate students at FAU, have been working in conjunction with their advisor, Dr. Daniel Raviv, electrical engineering professor, to create a process that depends on recycling waste energy to distill water at a near vacuum and at room temperature. The project was initiated and sponsored by inventor Michael R. Levine, who currently holds 76 patents. Distilling water is a process used to obtain clean water, but it has always been associated with high energy costs. The new process uses low quality heat, such as the heat that factories and power plants consider waste. Levine came up with the first version of the distillation process on paper, and the FAU team took it to another level, adding onto the idea and creating a working apparatus. The impact of such an

invention is apparent, especially when a location such as South Florida has placed a moratorium on new construction because of water supply limitations. The FAU team and Levine are working with power and water agencies to scale up the project to 1 million gallons of fresh water per day. The students entered their project in the 2006 Collegiate Inventors Competition®, a program of the National Inventors Hall of Fame Foundation, and were among the top seven finalists in the United States/Canada competition. This prestigious challenge recognizes and rewards the innovations, discoveries, and research by college and university students and their advisors for projects leading to inventions that can be patented. "I made a promise to myself that before I die, I want to do something that

helps other people. Here I am at 30, and I'm already doing that", said Moore. "I've been able to build this incredibly eccentric machine, spill gallons of water everywhere, and generally act like the mad scientist I always wanted to be as a kid", said Martinson. "Best of all, we solved one of the big problems of today, with an invention that can save millions of lives around the world." The invention has already drawn interest from Florida Power & Light Company, South Florida Water Management District and Covanta Energy, a New Jersey-based company that converts trash into energy. According to Dr. Raviv, "The project is simple and scalable, meaning that we can make fresh water in your back yard or community."

DIVISION OF ENGINEERING STUDENT SERVICES

At the Division of Engineering Student Services (DESS), our primary role is to provide academic support and guidance for our FAU engineering and computer science students to enhance the opportunity for a successful academic career.

It is absolutely essential that we provide a supportive environment that encourages students to interact and connect with one another, explore opportunities and achieve excellence. In order to facilitate such academic success, we assist our students in many different

areas, such as providing counseling to undecided engineering majors, promoting professional development through work opportunities, overseeing student professional societies and more. We also work closely with our students to provide assistance and tutoring for challenging courses.

Check out the box below to see what else we provide. Call (561) 297-2780 to learn more about the academic support and services you would receive as an FAU engineering/computer science student.

- Free Tutoring Assistance
- Scholarship Information
- Resources for Career Placement
- Student Professional Societies
- Academic Petitions
- Note-Taking Skills
- Guidance & Counseling
- Time-Management Skills
- Test-Taking Strategies
- Friendly Faces

DON'T LET LACK OF FUNDS STAND IN YOUR WAY!

There is always help at FAU. FAU has numerous opportunities for students in need of financial aid. If you have specific questions about your options, check out www.fau.edu/financialaid. The Website provides detailed instructions on how to apply for financial aid and also includes information on scholarships. You can also call the financial aid office at (561) 297-3530 for further information.



PREPARE NOW FOR FAU!

As you may know, there are a number of pre-requisite courses that need to be completed before the majority of upper division engineering or computer science courses can be taken at FAU. You can take these courses at your community college. To view the list of courses, go to www.sefec.org/matrix.htm. Simply click on your major under the community college you attend and the list of courses will appear. For more information, call (561) 297-2049.

To receive future updates and invitations to special events, please e-mail adrienne.simmons@fau.edu. Please include your full name, address and phone number.

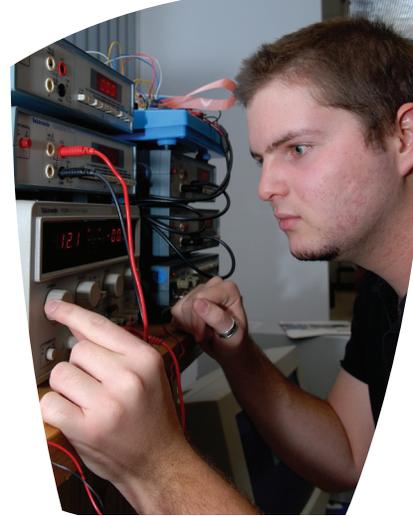
LEARN WHILE YOU EARN

At the Engineering Career Development office, we work closely with undergraduate and graduate students in the College of Engineering and Computer Science to provide co-op and internship positions in industry.

Students in the program obtain on-the-job work experience that is directly related to their academic majors in private, public and governmental organizations. Co-op and internship students earn a salary, academic credit and real-world experience. Currently, over 300 companies work with us to provide job opportunities for our students. Many of our students do very well in this program and find

themselves being offered full-time positions from their companies upon graduation. We provide assistance in the following areas: dissemination of resumes to potential employers for local, national and international co-op and internship opportunities, career guidance, resume writing guidance and interview support. This program is available for juniors, seniors and graduate

students in the College of Engineering and Computer Science. To register, you must fill out paperwork the semester before you would like to start your co-op or interernship. For more information, please call Arlene Gault at (561) 297-3578 or e-mail her at ecd@fau.edu.



CIVIL ENGINEERING PROFESSOR RECEIVES DISTINGUISHED INTERNATIONAL AWARD

In August 2006, Dr. D.V. Reddy, professor of Civil Engineering and the director of the Center for Marine Structures and Geotechnique at FAU, went to Singapore for the 31st Conference on Our World in Concrete and Structures as a nominee for a prestigious award.

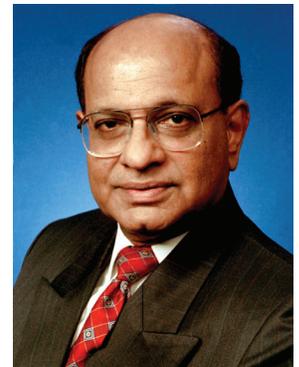
Dr. Reddy's engineering career spans nearly 40 years, with 25 of those years spent serving the FAU engineering community. He has received numerous awards, including Distinguished Teacher of the Year in 1989. Dr. Reddy is a prolific writer and researcher with 335 publications, including 5 books.

His paper, "Effect of Fire on Structural Elements Retrofitted by Carbon Fiber Reinforced Polymer Composites" won the distinguished STUP Consultants Ltd. Award for 2006, for which he is the principal investigator of the project and the first author. FAU Civil Engineering Assistant Professor Dr. K.

Sobhan, and former graduate student, J. Young, are co-authors. The major point of this paper is the great concern about the safety of buildings that are subject to fire exposure. The research identified the need for proper insulation of the bonded laminates (now commonly used to repair/rehabilitate structural members) to ensure structural integrity during and after the fire exposure. Another important part of the research was to evaluate the effect of fire on the structural integrity of the concrete itself. In high temperatures, the moisture in the concrete will be converted to steam under

pressure and spall the concrete. This phenomenon indicates the need for proper insulation.

In addition to teaching and conducting research, Dr. Reddy has been a structural consultant for the offshore power plants and oil production platforms. He is also an expert on seismic analysis, and was interviewed by FOX News about the recent offshore earthquake southwest of Apalachicola in September. We extend our appreciation to Dr. Reddy for all that he has done, and will continue to contribute to FAU and the community.



READY TO TRANSFER TO FAU?

Apply today! We are in the process of reviewing applications for the summer and fall 2007 semesters.

The deadline for transfer students to apply for the summer semester is April 15th. To apply to FAU, visit www.fau.edu/academic/admissions/Undadmissn.htm. There are detailed instructions available to guide you through the application

process. There are three ways that you can apply: 1) apply online 2) in person or 3) send in your application by mail. You will need to include your official transcripts as well as the \$30 application fee. If you have additional questions,

please call the Division of Engineering Student Services at (561) 297-2780 or the Admissions Office at (561) 297-3040.

ACADEMIC PROGRAMS

- Civil Engineering
- Computer Engineering
- Computer Science
- Electrical Engineering
- Mechanical Engineering
- Ocean Engineering

www.eng.fau.edu