

Letter from the Dean

Fall 2007

Dr. Evangelos Hadjimichael
Dean, School of Engineering

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Hello to all alumni and friends of the School of Engineering.

The 2006-2007 academic year came to its end on Sunday, May 20, with the Commencement ceremony on Bellarmine lawn. The School of Engineering graduated 31 students with a bachelor's degree, and 59 with a master's degree. We wish them all good fortune as they pursue their personal and professional goals, and we hope that while at Fairfield University, they were endowed with the knowledge, skills, and mindset to become contributors to their discipline, to sustain their intellectual strengths, and to maintain Ignatian ideals of service to others.

While we bid goodbye to those who are leaving us, we welcome a freshman class of full time undergraduates. The Class of 2011 is a group of 36 bright 18-year-old men and women, eager to embark on the great adventure of learning at Fairfield University. Our commitment to them is to guide them to develop their own talents, to effectively use the on-campus resources, and to develop their sense of professional integrity and social responsibility, along with their professional skills.

I am also gratified by some of the developments of the last year. In academe, decisions for new program development and pedagogy are often guided by our vision, because factual information with predictive power is not always readily available. Our new five-year program leading to a dual B.S./M.S. degree in software engineering (see page 2) has been licensed and accredited by the Connecticut Department of Higher Education. The decision to undertake this venture was based as much on instinct regarding the increasing central role of software design in emerging technologies, as on signals from the IT workplace.

We also anticipate that practicing engineers in the area of manufacturing will better learn skills through advanced software simulations; therefore, we have partnered with the Connecticut Center for Advanced Technology, which has provided us with a grant to create a simulation and analysis program under the auspices of the Automated Manufacturing program (see page 3 for more on this exciting project).

The academic and professional progress of our current students is central to our endeavors. Their timely advancement in their chosen discipline, from day one of their

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Letter from the Dean continued...

undergraduate engineering career, requires an environment rich in experiential learning. Hence our progress toward a more institutionalized program of internships, more demanding undergraduate engineering design projects, study abroad semesters, and career development programs. Marshall McLuhan's 40-year old prophesy of a global village is today's reality.

Enjoy the season ahead.



E. Hadjimichael
Dean



New dual degree program in software engineering

Beginning this spring, juniors in the software engineering program can elect to continue on for one more year of study to earn their M.S. in software engineering, provided they have maintained a 3.2 average in their engineering courses and have recommendations from their professors.

“Graduate engineering education is a key to innovation and creativity in technology, and central to the national economy, social welfare, and the security and management of social institutions. More specifically, there is increased emphasis on the need for master’s level engineering education. It is anticipated that this five year, B.S./M.S. program will effectively reduce the time to a master’s degree by one or more years,” says Dr. Hadjimichael.

Once accepted into the program, students complete the B.S. degree requirements in their fourth year, while taking graduate-level engineering classes. The fifth year of study includes eight courses, plus one elective taken during the summer. In addition to embracing

traditional educational objectives, the new program emphasizes experiential learning in the form of summer industrial internships, and includes a final capstone project.

In spite of recent outsourcing, there are a plethora of entry level IT positions in this country that demand a higher level of knowledge, skills, and accomplishment that are in tune with a master’s degree. There are globalization ramifications that must be seriously taken into account as universities prepare engineering talent for the 21st century. “The number of universities with accredited software engineering degree programs is relatively small, while the need for software development to solve complex problems across all sectors of technology is skyrocketing,” says Dr. Hadjimichael. “The proposed program will enable students to enter graduate studies in software engineering along a fast track in order to achieve positions of responsibility in their companies early in their professional career.”

Gifts and Grants

On the horizon: Center for Simulation, Modeling, and Analysis in Automation

Thanks to a \$40,000 grant from the Connecticut Center for Advanced Technology/National Aerospace Leadership Initiatives (CCAT/NALI), the School of Engineering is closer to its goal of establishing a Center for Simulation, Modeling, and Analysis in Automation. Dr. Paul Botosani is the coordinator for this project.

Once the center is complete, students will learn the concepts and techniques of modeling, simulation, and analysis using the state-of-the-art DELMIA V5 Automation software in the classroom and laboratory. Following will be a practicum where students will work on actual problem-solving projects provided by area manufacturers, primarily in the aerospace industry. With help from the CCAT grant, courses in the automated manufacturing engineering program will be re-configured to integrate DELMIA V5 Automation into the present curriculum, especially in conjunction with programmable logic controllers (PLC) for the purpose of teaching and training students. Ultimately, DELMIA V5, in conjunction with other resources in the manufacturing lab, will be a training tool for students who study automated manufacturing. Working together, faculty and students will develop collaborative programming solutions to digitally define, control, and monitor automation systems in order to improve the quality of the design and manufacturing processes, and to reduce costs.

The mission of CCAT is to strengthen the state's competitiveness in technology through collaboration among industry, government, and academia. Ultimately, CCAT aims to strengthen existing companies, support a world class work force, and lead innovation and enterprise creation.

Grant to establish minor in nanotechnology

A \$53,000 grant from the Connecticut Department of Higher Education (DHE) and The Connecticut Center for Advanced Technology (CCAT) has been awarded to Dean Hadjimichael to lead a team of educators from various institutions with the goal of establishing a platform for nanotechnology education. A program leading to a minor in nanotechnology will become available for adoption by all 48 post-secondary schools in Connecticut. Dr. Bill Taylor, associate dean, is participating in the nano-biology track of the minor, while Dr. Jerry Sergent, chair of the electrical engineering department, is assisting in developing the nano-electronics area. The full proposal addresses the need to identify learning goals, write syllabi, and delineate guidelines for the teaching of nanotechnology in Connecticut institutions. Industries with interests in nanoscale materials and devices will collaborate with the academic institution.

At nanometer dimensions, matter displays new phenomena and allows for the architecture of functional devices and systems, in a broad spectrum of technologies, with improved performance over

equivalent structures at the macroscopic scale. Thanks to nanotechnology, drugs are being developed that act like Trojan horses to deposit cancer-fighting medicine in the body to attack tumors; sunscreen can now better deflect UV rays; cars are lighter and more fuel efficient; tennis balls have better bounce. Almost all fields of engineering and science, most notably mechanical and electrical engineering, chemistry, biology, and physics, are contributing to the research and development of nanotechnology products. The federal government has created the National Nanotechnology Initiative to advance the education, research, and development in this truly 21st-century technology. Thus, the field affords many career opportunities for engineering and science students.

The minor certificate will be awarded by the Board of Governors, Connecticut Department of Higher Education, rather than by individual institutions. The minor will consist of four or five courses, along with experiential learning in fabrication and characterization of nano-materials, and there will be a standard curriculum for all participating Connecticut colleges and universities. The nanotechnology minor will be available to all students with suitable backgrounds, regardless of their major.

\$10,000 from Sikorsky for 3D printer

Sikorsky Aircraft, a longtime benefactor of the School of Engineering, has provided a generous \$10,000 gift toward the purchase of a 3D rapid prototyping instrument. The printer will allow students to create 3D replicas of their designs, based on coordinates they have entered.

Videoconferencing on the horizon

Grants totaling \$65,000 were contributed by the UI Foundation, the Regional Center for Next Generation Manufacturing, and individual donors toward the School of Engineering's planned videoconferencing system linking the school with the seven community colleges in the framework of an academic alliance. Once the link is in place, students will be able to take Fairfield University engineering courses in their home schools. The first school to be linked through videoconferencing will be Housatonic Community College in January 2008, with others to follow.

Microelectronics lab gets a boost

Jerry Parsons P'07, School of Engineering advisory board member and CEO of Communications Test Design Inc. near Philadelphia, has gifted the School with \$20,000 toward a microelectronics lab. The lab will allow students to design and fabricate microelectronics circuits using thick film, thin film, and printed circuit board technologies.

The power of internships

With industry expecting engineering graduates to “hit the ground running,” it has become increasingly clear that, to meet the educational goals of the School, undergraduates need to serve as interns during some part of their education. Students come back from a summer internship with a heightened sense of the engineering profession, increased knowledge and skills regarding the requirements of the workplace, and an appreciation of the intellectual discipline demanded by engineering, mathematics, and science courses. There is also a growing trend for internships to be extended during the academic year, especially for juniors and seniors. Since most upper-level engineering courses are taught during the evening, students are likely to have substantial blocks of time during business hours to get involved in real-world engineering projects.

In summer 2007, 50 students found challenging internship assignments. While 70 percent were juniors and seniors, a substantial number were underclassmen. And since a good match between the interests of the intern and the activities of the company is most important for a successful internship, the School is pleased to have 82 companies currently in our internship database.

Dr. Bill Taylor, associate dean, serves as coordinator of the internship program. He spoke to all freshmen at the start of the academic year, encouraging them to achieve a high GPA, which will support their ability to land an internship between their freshman and sophomore years. Another presentation in the second semester will promote the notion of an internship as essential for the students' professional development, and will guide them in the preparation of their resumes for use with their internship application. More advanced students will be invited to apply for an internship in the fall term. For students who desire an internship, the School will research engineering companies within a 15-mile radius of their home – regardless of the state of residence.

The School's goal is to double the number of freshman participants and to increase overall participation to 65 full-time students. For the future, the goal is to reach 100 percent student involvement in this career-building enterprise. **If your company can provide internship positions for students in electrical, computer, software, or mechanical engineering, please e-mail Dr. Taylor at htaylor@mail.fairfield.edu.**

High school students honored



Photo by Jean Santropatre

Last June, 33 juniors from Connecticut high schools were recognized for their achievements in math and science, an event sponsored annually by the School of Engineering and Sikorsky Aircraft Corporation. More than 100 guests, including the honorees, their teachers and parents, as well as School of Engineering faculty and Fairfield University administrators, attended the luncheon event, which was capped by a presentation and demonstration of the Welcome Robot, designed and built by an engineering senior design team. At left, the honorees pose with Dean Hadjimichael and Susan Hitchcock, director of community relations for Sikorsky.

One intern's experience

She may have only completed her freshman year, but Christina Klecker '10 has already proven she's got what it takes to be a successful engineer.

"We decided to test her a bit, to see what she could do," admits John Lombardi, product development engineer at Tek-Air Systems in Danbury, Conn., where Klecker interned this past summer. Tek-Air designs and builds critical air flow components for research facilities, universities, and other institutions. "Early on, we asked Christina to design and develop a new mounting method for a product we just introduced to our industry," says Lombardi, pictured at right with Klecker. The product, a new velocity alarm, "is used to monitor face velocity of a fume hood and report any deviations in air flow that can lead to a lack of containment by the hood. Within a week, Christina not only had the concept drawings completed, but had a completely operational prototype ready for our customer to test. Her design was simple, functional, and exactly what we needed," says Lombardi.

A mechanical engineering major, Klecker decided early-on that she wanted the real-world

experience an internship would provide. "I was honestly amazed that I could keep up with the other engineers. It gave me such a sense of fulfillment," she says. She credits an engineering design course she took her freshman year with helping her with designing and dimensioning. "I still had to learn Visio and Solid Works, but it was easier to pick them up having learned AutoCAD in class." Her other duties at the company included issuing drawings, generating engineering change notices, and doing some technical writing in support of production.

"Having an internship program was something new for us," says Lombardi. "We identified the workload we thought the intern could handle, and we came up with a list of goals. In each case, Christina exceeded our expectations. She was able to handle anything we could throw at her."

"As a freshman, I didn't think I knew anything," Klecker admits. "But you never know what you can do until you're out there. Tek-Air is a great company and they've really taught me so much already. I would absolutely recommend the internship experience to others."



Christina Klecker '10 with Tek-Air's John Lombardi.

New minor in engineering

The School of Engineering has won approval for a new minor in engineering for students who hope to complement their major field of study with the technical creativity and disciplined thinking inherent in the study of engineering. Interested students must have completed two courses in calculus and two in physics with an average of C or better to be considered for the minor. A minimum of 14 credits (three courses and two labs) are required to complete the minor. Students can select from a range of software, electrical, mechanical, and computer courses, according to their area of interest.

"Students in the minor will ultimately be able to work more effectively in their primary field, having acquired additional skills in a discipline that is a powerful force in shaping our daily lives," explains Dr. Vagos Hadjimichael, dean of the School of Engineering. While students in any field can minor in engineering, he adds, areas that are particularly well-suited include math, physics, chemistry, biology, and computer science.

Tau Beta Phi

New Engineering Honor Society

The School of Engineering has begun the process of establishing a Tau Beta Pi honor society – the only engineering honor society that represents the entire engineering profession.

Eligibility for Tau Beta Pi is no mean feat. Juniors must be in the top 10 percent of their class to be eligible; seniors must be in the top 25 percent. “Our chapter, Tau Beta Phi–Fairfield, is the first step toward becoming a Tau Beta Pi chapter, which will happen when the number of bachelor of science graduates reaches 40 in one year,” notes Dean Hadjimichael. The motivation for establishing a Tau Beta Pi chapter at Fairfield centers on the school’s continual striving for excellence and student achievement, he says.

Twenty-eight present and former students (dating back to 2000, the first year full-time students entered the School of Engineering) and their families were invited to an induction ceremony earlier this year. Dr. Jerry Sergent, chair of the School’s electrical engineering program, said faculty and staff thought it was essential to consider alumni. “We have had many students on par with students in top universities in the country, and we would like to honor our own with induction into this prestigious honor society,” he said. The keynote speaker was Dr. Lawrence Hollander, a former national vice president of Tau Beta Pi, who spoke of the many contributions by Society members and how important it was to recognize students whose hard work places them in the upper levels of their programs.

The following students and alumni were inducted:

- Class of 2002 **Patrick Palaka**
- Class of 2003 **Elizabeth Cronney, Nazar Ivaniv, and Christopher Shaw**
- Class of 2004 **Gregory Forrest and Christopher Wetzel**
- Class of 2005 **Michael Ellis, Edward Hogan, and Robert Williams**
- Class of 2006 **Scott Davidson, Tara Hansen, Janelle Buckley, Chester Andrejczyk, Robert Reber, and Dahiana Martinez**
- Class of 2007 **Anthony Kunz, Michael Zaffetti, David Kaveney, John Storto, Mark Adams, Christopher Swetcky, John Lee, Steven Shugdinis, Craig Alonzo, Jenny Turocy, Tia Ferrarotti, Usman Asif, and Geneva Skutka**

2006-2007

Senior Project Award Winner

The Rev. Jim Mayzik, S.J., right, gathers information from Imago the Welcome Robot, a robotic kiosk designed and built to assist visitors at the Kelley Center. Imago not only answers questions, but gathers data from prospective students via touch screen and/or voice recognition. Collected data is stored and made accessible through a secure Web connection. The project was designed and built by seniors Chris Swetcky, Mike Parsons, Anthony Kunz, David Kaveney, and Mike Zaffetti, who each took home a \$250 prize for the senior project that embodies the best canonical engineering principles in design and implementation.



Photo by Jean Santropatre

Congratulations to our graduates!

COMMENCEMENT

Photos: this page, by Jean Santropatre



ASSOCIATE OF SCIENCE

Isaac Brickett

BACHELOR OF SCIENCE

COMPUTER ENGINEERING

Megan Heugle
David Kaveney
Dario Longhitano
Michael Zaffetti

ELECTRICAL ENGINEERING

Mark Adams
John Babu
Michael Cholakian
Anthony D'Ostilio
Saqib Irfan
Brandon Marlowe
Michael Parsons
Derek Plescia
Christopher Swetcky
John Storto

MECHANICAL ENGINEERING

Daniel Breen
Patrick Fahy
Michael Foley
Anthony Kunz
Michael Leahey
John Lee
Pablo Malaver
Bradley Martocello
James Pagliaro
Jason Pflomm
Robert Reber
Brandon Reilly
Geneva Skutka
David Stewart
Jonathan Vallee

SOFTWARE ENGINEERING

Kevin Hennessy
Steven Shugdinis

MASTER OF SCIENCE

MANAGEMENT OF TECHNOLOGY

Arun Arul
Nidal Azba
Daniel Bilenko
Adam Fleisher
Anne Gartland
Giby Gregory
Mohan Hanumantha
Ashish Joshi
Lisa Knoll
James Kristie
Chatura Liyanage
Pranav Mehta
Paulo Melo
Martin Milkovic
Desmond Morris
Khurram Muhammad
Ronald Muriel
Eric Portante
Joseph Sabre
Jeffrey Schaefer
Richard Vinhais
George Walker
Debra Zampano

SOFTWARE ENGINEERING

Mohammed Abdi
Neeta Agarwal
Roy Atallah
Nirendra Bhattarai
Rajeswari Chilukuri
Freddy Gavidia
Shirshak Ghimire
Bama Govindaraja
Sreenivas Gowd
Joshi Jehen
Abdul Kurnool
John Maury
Omprakash Mendu
Junaid Mohammad

Ovidiu Ocrain
Nurulla Pathan
Jinjiu Shi
Chandini Shivananjegowda
Shwetha Shivanna
Brian Smith
Idrisahmed Syed
Paul Underwood
Ashraf Vallur
Parag Vanarase

ELECTRICAL AND COMPUTER ENGINEERING

Daron Bucknor
Francisco Castellanos
Robert Distinti
Andrew Gust
Enrique Iturralde
David Kingsbury
Anne MacIvlain
Junior Moses
Ian Reddy
Itty Samuel
Nishanth Vincent

MECHANICAL ENGINEERING

Ahmed Said

UNDERGRADUATE 3/2 PROGRAM

Michael Gentil
Kimberly Peterson
Dwight Alex Tejano



UPCOMING EVENTS

OCT. 25: DR. MICHAEL WHITE, professor of English, discusses his newest novel, *Soul Catcher*. Barone Campus Center Oak Room, 7 p.m. Call (203) 254-4307 to reserve a seat.

OCT. 26-28: WEEKEND IMMERSION PROGRAM in French, Italian, or Spanish. \$500. Call (203) 254-4307 for more information.

OCT. 28: ONE DAY UNIVERSITY with professors from universities across the country, held on the Fairfield campus. \$219 includes lunch. Click on www.onedayuniversity.com for more information and to register.

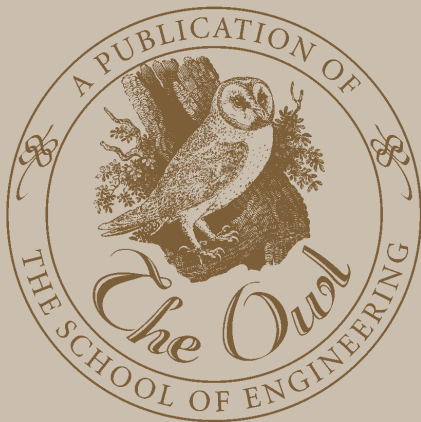
NOV. 5: OPEN VISIONS FORUM with author and CNN anchor Lou Dobbs. Quick Center for the Arts, 8:30 p.m. \$45. For tickets, call the Quick Center Box Office at (203) 254-4010.

NOV. 7: GRADUATE INFORMATION SESSION for anyone interested in a master's program. Kelley Center at Fairfield University, 5:30 p.m. - 7 p.m. Call (203) 254-4184 for more information or e-mail gradadmis@mail.fairfield.edu.



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Career Networking...FAN makes it easy!

Networking is key to finding a new job or changing careers. Yet most people have at least some difficulty networking on their own behalf. For Fairfield graduates, the Fairfield Alumni Network (FAN) makes it easy.

FAN has more than 1,500 alumni in a wide range of professions across the country, and many of these alumni are in diversified engineering fields. From aviation airframe design to software engineering, from Sikorsky to Oracle, these alumni have volunteered to share their experiences and advice with other Fairfield alumni, grad students and seniors.

Using FAN is easy, and it's free. First, you must join Fairfield's Online Community, and you need to be logged in. If you're not yet a member, go to

www.fairfield.edu/alumnicommunity

and register (you will need your unique ID number, which can be e-mailed to you by contacting alumni@mail.fairfield.edu).

Once you're logged into the Online Community, simply click on "Fairfield Alumni Network" and you can search for alumni by employment field, by title, by location, even by employer. And while you're using FAN — join! Your experience and insight will be valuable to others. Just click on "Join/My Profile."

Looking for tips on how to network effectively? Check out

www.fairfield.edu/networking

where you'll find the basics, and a link to the Online Community and FAN. For further information on FAN, contact jsaviskas@mail.fairfield.edu or call (203) 254-4000, ext. 3213.