Director’s Message

It is my great pleasure to introduce the premier issue of our Fairleigh Dickinson University’s (FDU) “Lee Gildart and Oswald Haase School of Computer Sciences & Engineering (GHSCSE) Newsletter.” We hope to make this publication an annual tradition in which we will celebrate the achievements of our alumni, students, faculty, and staff.

We are very proud of our students’ accomplishments, which include winning competitions and participating in internships, conferences, field trips, research, publications and community service. These achievements were made possible because of the strong camaraderie among the students and the great bond between students and faculty.

We welcome everyone to contribute to the newsletter. For alumni, we would like to know what you have been doing since you graduated from FDU. Please send the newsletter editors, Kalyan Mondal, mondal@fdu.edu, or Gonzalo Perez, perezg@fdu.edu, a note about your accomplishments, so we may share it with the FDU community through our website or this publication. We would appreciate your feedback. Thank you.

Alfredo Tan, director of GHSCSE, tan@fdu.edu

Student Achievements

FDU winning team of the 2009 MicroMouse Competition

FDU Students Win IEEE MicroMouse Competition

Dmitriy Kalantarov (BSEE/MSEE’09) and Brett Greenberg (BSEE’09) won first place as an FDU team in the MicroMouse Competition of the Institute of Electrical & Electronics Engineers (IEEE) Region 1 Student Conference held on April 25, 2009, at the College of New Jersey. The goal of the MicroMouse Competition is to build a robot that can navigate through a maze in the shortest time. FDU’s micromouse champion dubbed “Short Bus” completed the maze in 108 seconds. Other competing schools included The College of New Jersey - the defending champion; University at Buffalo, The State University of New York; and The City College of The City University of New York.

2008 ACM Programming Contest

On October 26, 2008, two FDU teams attended the 2008 Association for Computing Machinery (ACM) programming contest. FDU was ranked 18th among 45 teams, placing in the same tier with Columbia University and Cornell University. Zong Chen, assistant professor of computer science, was the faculty adviser for this contest.
A LUMNI NEWS

Please send news about your work, family, professional growth and any other happenings for publication in the Alumni News section to Kalyan Mondal, co-editor at mondal@fdu.edu.

CALENDAR OF EVENTS

DINNER HONORING MECHANICAL CONTRACTORS ASSOCIATION OF NEW JERSEY (MCANJ) FOR ITS SUPPORT OF FDU’S MECHANICAL ENGINEERING TECHNOLOGY PROGRAM
PLACE: FDU, METROPOLITAN CAMPUS
TIME: 6:30 PM ON 12/15/2008
In attendance were honorees from MCANJ: William Albanese, president; Alan O’Shea, executive director; A. Michael Candido, national board member (NBM); Robert T. Armistead, NBM and executive vice president, MCA of America (MCAA); and Marty Droby, education director. From FDU, J. Michael Adams, president; Joseph Kiernan, university provost and vice president for academic affairs; Patti Mills, dean, University College (UC): Arts • Sciences • Professional Services; Albert Schielke, associate dean, UC; Alfredo Tan, director, GHSCSE; faculty and students also attended the event.

PASSAIC COUNTY COMMUNITY COLLEGE (PCCC) INVITED SEMINAR
PLACE: PCCC, PATERSO, NJ
TIME: 5:00 PM ON 4/29/2009
Gonzalo Perez, GHSCSE coordinator for student recruitment and career placement, and faculty members Harvey Lowy, Kalyan Mondal and Melvin Lewis made presentations on FDU engineering and engineering technology programs and on contemporary topics such as very large scale integrated circuits (VLSI), database and data mining to the PCCC faculty and students.

VERIZON CORPORATE HUMAN RESOURCES (HR) VISIT
PLACE: FDU, BECTON HALL
TIME: 2:00 PM ON 5/1/2009
Bryan Vetrecin and Emilio Javier from Verizon HR met FDU students and provided many tips on career development.

NY/NJ/PA ENGINEERING TECHNOLOGY ASSOCIATION (ETA) MEETING
PLACE: FDU, METRO CLUB, ALUMNI HALL
TIME: 9:00 AM ON 5/15/2009
Chairpersons from various colleges attended ETA’s 41st Annual Meeting, which was hosted by FDU.

Second Place for IEEE Student Paper Contest
Dmitriy Kalantarov and Brett Greenberg, FDU electrical engineering students, wrote and presented the paper “Building a Better MicroMouse,” which won second place at the 2009 Region 1 Student Paper Contest held during the 2009 Trenton Computer Festival. Sixteen teams from various universities including FDU, The College of New Jersey, Cooper Union (three entries), Massachusetts Institute of Technology, Boston University (two entries), and West Point Military Academy, competed in the contest, which required a written paper and a 15-minute oral presentation.

Concrete Canoe Competition
An FDU team of engineering technology students won fourth place in the 2009 Concrete Canoe Competition organized by the American Society of Civil Engineers (ASCE) during the 2009 ASCE Metropolitan Regional Conference hosted by Polytechnic Institute of New York University. FDU students designed, constructed and tested a canoe made of special lightweight concrete all under the guidance of Stanley Bielewicz, coordinator of civil engineering technology program. Students also raced their canoe on a lake against other schools. FDU will be hosting the 2010 ASCE Metropolitan Regional Conference.

IEEE North Jersey Spring 2009 Student Presentation Contest Winners
Gloria Reinish, professor of electrical engineering, hosted the Spring 2009 IEEE North Jersey Student Presentation Contest. The main focus of the contest is to give students an opportunity to sharpen their communication skills and to help students prepare for real-life situations as practicing engineers and researchers. FDU student winners include Tolulope Malik (BSEE’09), who won first place in the undergraduate category, and Grace Lily Reddy (MSEE’09), who clinched first place in the graduate category. Other FDU electrical engineering undergraduates Brett Greenberg, Dmitriy Kalantarov, Thomas Cauttero and Kevin Oseghale also won prizes.
Management Information Science (MIS)
Graduate Student Completes UN Internship

Graduate MIS student Fahad Alnajjar under the guidance of Gertrude Levine, professor of computer science, completed a six-week internship at the United Nations (UN) in the Arabic unit of the Department of Public Information. Fahad maintained Arabic UN Website and worked on a new UN Website which will be launched soon.

Information Technology (IT) Internships

Andre Diamond, an IT major, is completing an internship at Panasonic Corporation of North America, Secaucus, N.J., supporting videoconferencing services and web-based consumer product competitive analysis. Another IT major, Brian Carney, is with Bristol-Myers Squibb Company, Plainsboro, N.J., working on helpdesk knowledge database support and software testing. Priyanka Shitole (BSIT'09) completed her internship at Shelko Consulting LLC, Hackensack, N.J., contributing to their Website update.

Computer Science Students Visit IBM Research Center, Hawthorne, N.Y.

The IBM Thomas J. Watson Research Center is the headquarters for IBM Research, the largest industrial research organization in the world, with eight labs in six countries. FDU students and Zong Chen, computer science faculty, visited the center on April 22, 2009, and learned about IBM’s research areas in advanced database solutions, middleware systems and technology for knowledge management, content management, Web technologies, e-commerce, e-utilities, user design for human-computer interaction and services-oriented architectures. Suzanne McIntosh of IBM, an FDU alumnus and a member of FDU’s Computer Science Industrial Advisory Board, hosted the visit; Gonzalo Perez of FDU coordinated the trip.

Faculty and Students Visit the Meadowlands Xanadu in East Rutherford, N.J.

The Meadowlands Xanadu project includes world-class theatres, a shopping mall, fine dining, an amusement park and an indoor ski slope, to name just a few of its features. The ski slope is only the second of its kind in the world, the other one being in Dubai, United Arab Emirates. George Anthony, supervisor of E&S Engineering’s Xanadu project, provided FDU students a glimpse of one of the largest, most innovative projects in North America.

FDU Engineering and Engineering Technology Students Participate in PSE&G Engineering Week

FDU students participated in the Engineering Week event held on February 20, 2009, at the PSE&G corporate headquarters in Newark, N.J. Gonzalez Perez, GHSCSE coordinator for student recruitment and career placement, accompanied the students. The event was hosted by PSE&G to bring University talent to meet hiring managers in the engineering field. As a follow-up to the event, representatives from PSE&G human resources department visited FDU’s Metropolitan Campus in Teaneck and sat down with select computer science and engineering students for one-on-one interviews.

MCAA Student Summit and Conference

FDU’s civil, construction and mechanical engineering technology students attended the Mechanical Contractors Association of America (MCAA) Student Summit held in Omaha, Neb., in Fall 2008, and the MCAA Annual Conference held in Scottsdale, Ariz., in Spring 2009. Students also participated in the Mechanical Contracting Competition during the conference under the guidance of Conrad Odiase, coordinator of construction engineering technology program. The trips were made possible by a generous grant from the Mechanical Contractors Association of New Jersey.

Outstanding Student Award

Dmitriy Kalantarov graduated May 2009 with three degrees from FDU: a BS and an MS in electrical engineering and a BS in mathematics. His overall cumulative grade point ratio (CGPR) was 4.0. Kalantarov was the president of FDU-IEEE Student Branch when it hosted the 2008 IEEE Region 1 Student Conference at FDU. He won several awards in the IEEE competitions, including his team placed first in the 2009 IEEE Region 1 MicroMouse Competition. In addition, he has received the GHSCSE Director’s Award in recognition of his outstanding academic achievement and leadership in the school. Kalantarov has been admitted to the Ph.D. programs at Columbia University and Stevens Institute of Technology.
Master’s Thesis Completed

Pranesh Shah completed a thesis titled “Modeling and Performance Analysis of IEEE 802.16d Link Using MATLAB and SIMULINK” and earned his master’s degree in computer engineering in August 2008. He was guided in his research by Kalyan Mondal, assistant professor of electrical engineering. WiMAX is based upon IEEE 802.16 standard, the next generation broadband wireless technology that is now being adopted by various service providers. In his work, Pranesh enhanced a SIMULINK model of WiMAX PHY and undertook studies on the resilience of transmission under severe channel impairments.

Senior Honors Theses Completed

Seniors completing their honors theses are as follows:


Krishna Udani, computer science major, “Computer Network — Cross Layer Design for Wireless Communication,” mentored by Hong Zhao, assistant professor of electrical engineering.

The students received their bachelor’s degrees at the University commencement ceremony on May 19, 2009.

Outreach Program News

BCA Students Interning

GHSCSE faculty have mentored four Bergen County Academies (BCA) seniors who intern at FDU every Wednesday since AY 2007-2008. Students have worked with FDU faculty on various projects and topics, including an autonomous kiddie-size vehicle, digital image processing, communications, cryptography and digital systems. FDU mentors include computer science faculty member Zong Chen, mathematics faculty member Mark Farag, engineering technology faculty member Melvin Lewis, and engineering faculty members Kalyan Mondal, Zhiwei Mao, Hong Zhao, Howard Silver and Alfredo Tan.

Robert Weckstein, one of the four BCA students, successfully completed his internship with Zhao learning digital logic design on Spartan 3. He also worked with Mondal on digital signal processing on MATLAB and DSK C6713 DSP development system and on “Hill ciphers using matrices with coefficients in a near-field” with Farag. Other BCA students and some FDU undergraduates have worked with Lewis on an autonomous vehicle project. A Fisher Price Power Wheels Jeep Wrangler has been heavily modified with the goal that it will drive and navigate by itself. At this writing, the vehicle operates under toggle switch box control or limited autonomous control. It detects obstacles, but it is unable to avoid them. Soon it will navigate by global positioning system (GPS) and avoid running off the road and running into things.

SAT Preparation Training

Gonzalo Perez, GHSCSE coordinator for student recruitment and career placement, worked in concert with the mathematics faculty to create a tutoring program that would help improve high-school students’ Scholastic Aptitude Test (SAT) math scores. Mathematics faculty members Mark Farag and David Haas and their math students have been providing invaluable service to financially disadvantaged high-school students by preparing them well for the quantitative part of the SAT exam. This voluntary effort is helping the students to get admitted to colleges and is well appreciated by the community.

Outreach Programs for High-School Students

GHSCSE has been conducting the Technical Enrichment and Outreach Program (TEOP) for 35 high-school students from eight school districts every semester, 12 Saturdays per semester, for a total of nine semesters. This program is supported by several grants, totaling $215,000, from various donors including the Toyota USA Foundation, General
Electric, the John Victor Machuga Foundation, the Exxon Mobil Foundation, the Paterson School District, PSE&G and BAE Systems, as well as by a $1-million endowment gift from Greg Olsen (BS’66, BSEE’68, MS’68).

Alfredo Tan and Melvin Lewis are the director and the deputy director, respectively, of TEOP. Gonzalo Perez works with surrounding communities ensuring GHSCSE outreach programs reach out to underrepresented minorities and financially disadvantaged students. The Spring 2009 TEOP graduation ceremony was well attended by high-school teachers and administrators, participating students and their parents, community leaders and FDU faculty,

FDU Math Club Activities

Students interested in mathematics have started meeting with mathematics faculty members Mark Farag and David Haas to work on problems beyond their curriculum. They are researching several contemporary higher math topics with faculty help. They also tutor financially-disadvantaged high school students for the math section of the SAT test.

Alumni News

FDU Alumus Sung-Mo “Steve” Kang Hosts First Lady Michelle Obama in UC Merced Commencement

“Dream big and give back,” First Lady Michelle Obama told the first graduating class of University of California, Merced (UC Merced) on May 16, 2009, in her first commencement speech as first lady. FDU alumus Sung Mo “Steve” Kang (BSEE’70), UC Merced chancellor, presented UC Merced’s Chancellor’s Medal to Obama, who said she was inspired by UC Merced students who lobbied her to speak.

Graduate Admitted to Duke University Ph.D. Program

Achut Manandhar (BSEE’08) was accepted to the prestigious Duke University Ph.D. program starting Fall 2009. He will research under the guidance of Leslie Collins, professor of electrical and computer engineering and professor of biomedical engineering, on statistical signal processing as applied to cochlear implants and subsurface sensing.

Program Updates

MSEE Curriculum

Starting in Fall 2009, incoming graduate electrical engineering students will follow a new curricular plan whereby they will choose a major area and a minor area of concentration. The three concentration areas offered are digital signal processing and communications, devices and systems, and computers. Students must take at least six courses in their chosen major area and two in their minor area to acquire more depth and breadth in different fields of electrical engineering. Several new courses will support this new curriculum.

VLSI at FDU

A new graduate course on VLSI systems was offered by Kalyan Mondal, assistant professor of electrical engineering, in Spring 2009 using Mentor Graphics nanometer design tools. Apart from theory, students had hands-on experience on circuit block schematic capture, simulation; layout, audits and parasitic extraction, as well as VHDL synthesis-based ASIC design using industry standard tools like “ModelSim.” Dritan Bitincka and Reji Joseph, school lab directors, have set up the tools on Linux and Windows. Shivaram Thirugnanasambandam (MSEE’08) was an early user and developed several tutorials for the tools.

Information Technology (IT) Tracks

Starting Fall 2009, IT majors will be allowed a choice between two tracks: Web technology; network and systems administration on FDU’s Metropolitan campus and at FDU-Vancouver. New courses are being developed to support these tracks.
Computer Science IAB Meeting

The Computer Science Industrial Advisory Board (CSIAB) met on November 12, 2008. Attending from industry were Alan Klayman, Suzanne McIntosh, Lori Watrous-deVersterre and Andre DiMino. Gertrude Levine, professor of computer science, discussed the new concentrations that the school is developing. These include concentrations in networks, computer security and health informatics. Jonathan Stanton of Hudson River Sloop Clearwater Inc. recently joined the board.

Electrical Engineering IAC Meeting

The Spring 2009 Electrical Engineering Industrial Advisory Committee (EEIAC) meeting was convened by Howard Silver, deputy director of GHSCSE, and held on April 27, 2009. Apart from faculty, industry representatives Eric Stoll of ITT SSD; Kevin Xu of EMC Corp.; Cheng Youn Lu of Teletronics Technology; Andrew Salva (self-employed); and Gary Schick of Iroquois Pipeline Operating Co. attended the meeting. The EEIAC reviewed the BSEE program objectives and the circuits and electronics courses, suggested ways for improvement, and recommended more courses on power and/or control areas in view of the current emphasis on energy.

Information Technology IAC Meeting

The latest Information Technology Industrial Advisory Committee (ITIAC) meeting was held on April 22, 2009. Glenn Osborne, senior director of IT, PTC Therapeutics, and David Levin, director of business development, Ness Technologies, joined the committee and attended the meeting. They reviewed the IT program and provided many thoughtful suggestions for further improvement. Osborne has offered to donate networking equipment to GHSCSE.

Engineering Technology IAC Meetings

Each semester, GHSCSE’s various engineering technology Industrial Advisory Committees (IACs) convene one or two meetings where industry representatives review the programs’ outcome assessment and improvement plans and suggest ways to keep the programs current and relevant to industry. For example, the Civil and Construction IAC held a meeting where Ken Job of Job and Associates and Vincent Valentini of J. Fletcher Creamer & Son, Inc. had suggestions regarding offering a construction management degree program. The Mechanical Engineering Technology IAC meeting included Bob Roberti of Liberty Mechanical Contractors Inc.; Kane Armistead of Armistead Mechanical; and Marty Drobny of Mechanical Contractors Association of New Jersey. There were discussions on internships and American Society of Mechanical Engineers (ASME) competitions.

Laboratory Computer Upgrades

Several new development tools were installed including Adobe Photoshop Elements to support INFO2106 Website Development and Mentor Graphics EDA tools to support EENG7755 VLSI Systems. New Texas Instruments DSK6713 kits were procured and installed in the M207 computer lab to support EENG7852 Digital Signal Processing Using C on DSP.

Information Technology (IT) News from Vancouver

Vasudevan Janarthanan and Eduard Babulak, information technology (IT) faculty members of FDU-Vancouver, are conducting a program outcome assessment for the IT program with guidance from the IT and computer science faculty at the Metropolitan Campus. Meetings on the IT curriculum, outcomes assessment and other topics are regularly held by IT faculties from the two campuses using an ITV link.

New Faculty Welcome

Yoo-Jung An joined the faculty of computer science as a visiting assistant professor teaching courses such as Computer Networks, Operating Systems, Programming for the Internet and Systems Programming. Her research is on semantic deep Web search.

Stanley Bielewicz joined GHSCSE as a lecturer in civil engineering technology. His teaching interests are in Steel

**Zhiwei Mao** joined the school as an assistant professor of electrical engineering in Fall 2008. She conducts research and publishes papers on wireless communication systems, digital signal processing for communications, radio resource management and optimization for engineering applications; she has more than five years of teaching experience. At FDU, Mao teaches graduate courses, including Computer Communication Networks and Digital Communications, and several undergraduate electronics courses.

**Conrad Odiase** joined GHSCSE as a lecturer in construction engineering technology after many years of industrial experience. His teaching interests are in Advanced Steel Design, Advanced Structural Analysis, Construction Practices, Estimating and Surveying. Additionally he is involved with green-building technology and sustainable design.

**Hong Zhao** joined the school as an assistant professor of electrical engineering in Fall 2008. She researches and publishes technical papers on multimedia streaming, digital signal processing, cross layer design, and computer networks; she has more than 10 years of teaching experience. At FDU, she is teaching graduate and undergraduate courses such as Digital System Design, Logic System Design and Computer Architecture.

**Hyung-Tai Cha**, associate professor in the School of Electronic Engineering at Soongsil University in Seoul, South Korea, is spending his sabbatical year at GHSCSE. Cha is an avid researcher in audio compression.

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**Faculty Achievements**

**Corporate and Foundation Relations Grant Recipients**

**Alfredo Tan**, director of GHSCSE, and **Melvin Lewis**, associate director of GHSCSE, received varying amounts of grants from the Mechanical Contractors Association of New Jersey for the HVAC program and from BAE Systems and CMX for the Technical Enrichment and Outreach Program.

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**Vladimir Zwass Awarded Gregory Olsen Endowed Chair Professorship**

FDU honored **Vladimir Zwass**, distinguished professor of computer science and management information systems, with the Gregory Olsen Endowed Chair in Mathematics, Science and Engineering at FDU’s annual Academic Convocation held on September 10, 2008, at the College at Florham. This is a great honor not only for Zwass for his sustained outstanding achievements but also for GHSCSE.

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**Harvey Lowy – 2008 University College Outstanding Teacher**

**Harvey Lowy**, associate professor of computer science, was presented with the 2008 University College Outstanding Teacher award on September 3, 2008. GHSCSE students and faculty are proud of his excellence in developing and teaching database management-related courses to both undergraduate and graduate students.

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**Equal Opportunity Fund Outstanding Faculty**

Students and staff in the Equal Opportunity Fund program have selected **Mark Farag**, assistant professor of mathematics, as the outstanding faculty member on the Metropolitan Campus for 2008. This is a great honor for Farag and GHSCSE, which prides itself on great teaching and outstanding service to students.
Engineering Seminar Series Off to a Good Start

Thanks to Zhiwei Mao and Hong Zhao, GHSCSE electrical engineering faculty members, the series of seminars started in Spring 2009 with an hour-long seminar by their colleague Kalyan Mondal on “An Overview of VLSI Design.” Apart from the history of this technology, both custom and ASIC design methodologies were described. Electronic Design Automation (EDA) tools at FDU supporting these methodologies were also introduced.

Melvin Lewis, associate director of GHSCSE, presented a very practical seminar on debugging electronic circuits: “Troubleshooting Analog and Digital Circuits” on April 29, 2009. The techniques covered are not documented in any textbook, and students and faculty appreciated learning the techniques from the life experience of an engineer.

Faculty Book Author


More Publications …


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