

Fall 2004

Engineering News, Fall 2004

School of Engineering

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Faculty & Staff News

Stephen Chiappari, Assistant Professor and Chair of Applied Mathematics, has been appointed to serve a five-year term as newsletter editor for the Northern California, Nevada, and Hawaii section of the Mathematical Association of America (MAA). For more information on Dr. Chiappari, visit: <http://www.scu.edu/engineering/amth/people/chiappari.cfm>. For more information on the MAA, visit: <http://www.maa.org/>

Ruth Davis, Associate Dean for Undergraduate Studies and Professor of Computer Engineering, was awarded the Robert W. Peters Professorship, designated for a faculty member in the area of advanced technology to further the academic quality and mission of SCU as a Jesuit and Catholic university. Dr. Davis was chosen in recognition of her professionalism as a computer engineer, her scholarship in the area of software verification and logic programming, her dedication to engineering education, and her commitment to minorities and women in engineering. For more information on Dr. Davis, visit: <http://www.cse.scu.edu/~rdavis/html/>

Cary Yang, Associate Dean and Professor of Electrical Engineering, was awarded the IEEE Educational Activities Board Meritorious Achievement Award in Continuing Education with the following citation: "for extensive and innovative contributions to the continuing education of working professionals in the field of micro/nanoelectronics." For more information about this award, visit: <http://www.ieee.org/organizations/eab/EABAwards/descriptions.htm>

In addition, Dr. Yang has been selected by United States Congressman Mike Honda and California State Controller Steve Westly to serve as a member of the Blue Ribbon Task Force on Nanotechnology (BRTFN). For more information about this joint Federal/State initiative on nanotechnology, please visit: <http://www.honda.house.gov>. For more information on Dr. Yang, visit: <http://www.scu.edu/engineering/ee/people/yang.cfm>

According to the *American Society of Engineering Education's* report in Profiles of Engineering and Engineering Technology Colleges, 2003 Edition, SCU was ranked #1 in the nation, with 38.2%, for the percentage of women tenured/tenure-track teaching faculty members by school. For more information, visit: <http://www.asee.org/about/publications/profiles/upload/2003engprofile.pdf> (Refer to page 28)

Research



Edwin Maurer, Assistant Professor of Civil Engineering, participated in a study that was featured in the Stanford Report, "How Climate Change Could Have Drastic Impact on California." This article received a tremendous amount of attention and even played a significant role in the California Air Resources Board's unanimous decision to adopt the strictest standards in the world for greenhouse emissions. For more information on Dr. Maurer, visit: <http://www.engr.scu.edu/~emaurer/>



Thomas Schwarz, S.J., Associate Professor of Computer Engineering, was given a Microsoft Research Grant for his Encrypted Scalable Distributed Data Structures (SDDS) research proposal. There was so much enthusiasm for the proposal, that even though he did not rank high enough to receive full funding, Microsoft created a "micro-grant" of \$5,000 as an unrestricted gift to do research on this topic. For more information on Fr. Schwarz, visit: <http://www.cse.scu.edu/~tschwarz/>

Publisher's Notes by Dr. Cary Yang



This issue of Horizons, our quarterly electronic newsletter, marks the arrival of our new editor, Corinna Corpuz. As Assistant to the Associate Dean for New Initiatives and Partnerships, Corinna coordinates the production of Horizons as well as all alumni-related events. Her contact information is given at the end of this newsletter. On behalf of our entire Horizons staff, I wish all of you prosperity and peace in the new year.

FALL 2004

From the Dean's Desk

Dean Daniel Pitt

Special points of interest:

- From the Dean's Desk
- Students
- Events
- Alumni
- Faculty & Staff
- Research
- Publisher's Notes



Accreditation: Trial or Inspiration

In late October the School of Engineering hosted a team of evaluators from the Accreditation Board for Engineering and Technology (ABET) for the dreaded accreditation review that typically takes place once every six years. I say "dreaded" not because I felt that way, though I certainly experienced some anxiety in the weeks preceding, but because it is often regarded as a no-win prospect: if it goes well you receive only mild criticism; if it doesn't go well you undergo another trial in a year or two or even lose your accreditation. We approached our ABET review with a different attitude and as a result it was a positive experience for us.

their feedback, all with an eye to benefiting student learning. During the three-day visit, I felt we sat on the same side of the table with them, examining, considering, learning. We wanted to learn from them and learn we did, receiving suggestions (and observations of our faults) that will concretely improve our programs for the benefit of our students. In addition to the suggestions and fault citations, the evaluating team gave us a strong endorsement of our vision and direction, which inspires us to make our improvements as quickly as possible. Over the last two years we have systematized our continuous-feedback process into something we call PIPE: program improvement process for engineering. With PIPE, our preparation for future ABET visits will be almost automatic, but more importantly it will guide our ongoing improvement so that our programs, like the engineering profession itself, will be dynamic and ever better.

Though ABET dominated our fall quarter, we had plenty of excitement going on in our programs themselves. The conference on sustainable development we organized and hosted in El Salvador, and its consequent joint activities in teaching and research, was a highlight, as was the appointment of a new endowed chair in engineering. I hope you enjoy reading about them in this issue of Horizons.

For more information on Dean Pitt, visit: <http://www.scu.edu/engineering/dean>

Inside This Issue:

SCU Engineering Achievement Awards 2005	2
Distance Learning Site Established in El Salvador	2
SCU Bridge Program in the San Jose Mercury News	2
Establishing Collaborations Abroad	3
SCU Ranks in the Top 10% for Percentage of Female Undergraduate Engineering Students	3

Since 2000, ABET has required engineering schools to demonstrate how well they have met the ABET criteria and their own goals. Thus we had to gather data measuring our results, among current students, graduating seniors, and alumni from three to five years after graduation. Between the data gathered over the last four years and the documentation of everything we do, we compiled 75 linear feet of documentation, a daunting effort and probably an excessive one. But we entered into the review guided by one of our strategic objectives (from our strategic plan): "Incorporate ABET processes into continuous School practices." And we welcomed the evaluators with an eagerness to improve our programs based on

SCU Engineering Achievement Awards 2005

Beginning in the new year, the former Distinguished Engineering Alumni Awards Ceremony will have a new format. The awards, together with faculty recognition awards, will be presented in the SCU Engineering Achievement Awards 2005 Ceremony. The new event will be held on June 8, 2005 from 3:00 – 6:00 PM in the Mayer Theatre, instead of the previous date of January 22, 2005.

This event honors members of the School of Engineering's alumni community who have distinguished them-

selves through outstanding professional achievement, noteworthy community service, and/or exemplary dedication to Santa Clara University. It will also feature an eminent leader from industry as the keynote speaker. An outdoor reception will immediately follow the Awards Ceremony, allowing attendees to socialize and network. The event is open to all Santa Clara University alumni, friends, students, faculty, and staff, as well as the Silicon Valley technology community. Updates on this event can be viewed at: <http://www.scu.edu/engineering/about/dea.cfm>

Distance Learning Site Established in El Salvador

Starting in Winter Quarter 2005, the School of Engineering will teach its first class to students at the Universidad Centroamericana Jose Simeon Canas (UCA) in San Salvador, El Salvador.



According to course coordinator Jeff Ota, "watching a working demo of the system in El Salvador was amazing. The quality of video and audio was excellent, and the pre-set camera angles made the white board easy to read. It was like watching a football game on TV. I just felt I was 'in the lecture' more even though I was watching it at a remote site. The students at UCA will probably have an advantage over those in the actual classroom."

Using network and Internet telephony/video equipment provided by a Cisco Systems grant, and an H.323 videoconferencing system on loan from Tandberg, Mechanical Engineering Professor Mark Ardema will teach the fundamentals of Aerospace Engineering to 30 SCU students in classroom EC325 and 10 students sitting in a classroom 2500 miles away at UCA as if they were in the same classroom.

The system uses Cisco's new IP phone/videoconferencing technology along with a suite of cameras, microphones, and computers that are part of the Tandberg system to broadcast Prof. Ardema's lectures to the students at UCA. A webcam and IP telephone at UCA will allow Prof. Ardema to see the 10 students and hear any questions they want to ask during the lecture.

In addition to the Cisco grant, the University's Chief Information Officer, Ron Danielson, along with Dean Pitt provided funding to the project out of internal funds. One major cost was providing books for the students at UCA.

Due to network concerns, the SCU IT Department made an extra effort to ensure that the connection could be made behind the SCU firewall. IT Manager, Todd Schmitzer, and his colleague, Eddie Butler, led the successful effort.

SCU Bridge Program in the San Jose Mercury News

Editorial page columnist, Joe Rodriguez, spent time on campus during the first week of September speaking to students in the summer bridge program. His op-ed piece, "SCU Helps Solve Mystery of College" was featured in the September 10, 2004 edition of the San Jose Mercury News. Ten of the thirty bridge students were engineering majors. In addition, Jeff Ota, Adjunct Lecturer, and Jorge Gonzalez, Professor of Mechanical Engineering, led the School of Engineering's participation in the program. In the article, Rodriguez commends SCU for encouraging minority admissions. He also stresses the importance of keeping the families of college students involved and informed. For the complete article, visit: http://www.mercurynews.com/mld/mercurynews/news/columnists/joe_rodriguez/ (Please note that you will be asked to register with Mercury News before being able to view the article.)

Establishing Collaborations Abroad

Nam Ling, Professor of Computer Engineering and Associate Dean for Graduate Studies and Research in the School of Engineering, recently visited Feng Chia University and Southern Taiwan University of Technology for



Prof. Nam Ling & President Frank Chang of Southern Taiwan University of Technology

the purpose of establishing collaborations for the SCU School of Engineering. Earlier this year, the Presidents and administrators from these two universities visited SCU. In return, combining with other business travels, Dr. Ling made a side trip to meet with the Presidents, Provosts, Vice Presidents, Deans, and Department heads of these two universities. For more information on Dr. Ling, visit: <http://www.cse.scu.edu/~nling/>



Prof. Nam Ling & President Yuan Tong Lee of Feng Chia University

SCU Ranks in the Top 10% for Percentage of Female Undergraduate Engineering Students

According to the Engineering Workforce Commission (EWC), SCU ranks 35th nationally out of 350 in the percentage of female undergraduates enrolled in engineering programs. SCU's enrollment figure of 26.8% is almost 9 points above

"SCU's enrollment figure of 26.8% is almost 9 points above the national average of 18.0%."

the national average of 18.0%. The data is published in EWC's latest report, Engineering & Technology Enrollments, Fall 2003. For more information about the EWC or this report, visit: <http://www.ewc-online.org/>

Alumni News

Engineering Alumni Board (EAB) has confirmed Mark Pedrazzi (BSME '81), former Chair-Elect, to replace Richard Weber (BSCE '92) as the new Chair for 2005-6. In addition, Conrad Marotta (MSME '94, BSME '87) was nominated and elected to the position of Chair-Elect for 2005-6. On behalf of the School of Engineering, we thank Richard Weber for his years of dedicated service as chair and member of EAB and we look forward to his continued contributions to the School. For more information on the EAB, visit: <http://www.scu.edu/engineering/about/alumniboard.cfm>. Anyone interested in becoming a member should contact Mark Pedrazzi at mark.pedrazzi@udlp.com

Hank McKenna (BSME '55) has published the first comprehensive reference of fibre rope systems, *Handbook of*

Fibre Rope Technology, Woodhead Publishing (2004). McKenna has 40 years experience as an engineer and marketer and has worked in mechanical engineering and marine systems design on a national and international scale. He has a world-wide reputation in the design and application of ropes for high performance service. Since forming Tension Technology International, he has advised rope manufacturers and fiber producers, consulted for offshore contractors, designed barge and supply boat moorings and riser protections systems, and conducted many accident investigations. He is President of the company and has also authored numerous papers.

In addition, he also taught mechanics, material science, and machine design for 5 years during the 1960s at SCU. He currently resides in Weston, MA.

For all alumni, register free of charge at Santa Clara Alumni Connections and become part of the SCU Alumni online community. If you are interested, visit: <http://www.alumniconnections.com/santaclara/>