Ahalt Named to Head Ohio Supercomputer Center

Stanley C. Ahalt, Professor of Electrical Engineering, was named Executive Director of the Ohio Supercomputer Center (OSC). Dr. Joe Steger, Governing Board Chair and University of Cincinnati President, announced this summer.

Dr. Ahalt will oversee a staff of more than 100 persons and will report to the OSC Governing Board, comprised of six university presidents, an industrial representative, and the Ohio Board of Regents Chancellor.

“We are very fortunate to have in Ohio one of the best people in the world to lead OSC,” Dr. Steger noted. “After an international search, it became evident that Dr. Ahalt, an outstanding scholar, researcher and leader, is the right match for OSC.”

“Stan has the unique ability to communicate not just ideas, but the motivations and rationale behind them,” said Dr. Fred Garber, Wright State University Department of Electrical Engineering Chair. “I believe this ability is critical for building consensus and ownership. He relates very well with people, ranging from senators to first-year students.”

Life After Graduate School: Duixian Liu Journey Marked by Excellence

It is a long way from a two-acre farm in Xi’an, China to an award-winning career with IBM and one of the most successful laptop computer innovations in today’s internationally competitive cyberworld.

It is a journey of excellence successfully traveled by Duixian Liu (M S86; PhD 90), a Research Staff Member at IBM’s T. J. Watson Research Center, Yorktown Heights, N.Y. Liu received two of IBM’s Outstanding Technical Achievement Awards in 2001 and 2002, and IBM’s highest technical award in 2003 for his contributions to the integrated antenna subsystems for laptop computers.

From 1990 to 1996, while on the staff of Valor Enterprises, Piqua, OH, he designed an antenna product line ranging from 3 MHz to 2.4 GHz, a key factor in winning the prestigious Presidential E Award for Excellence in Exporting in 1994.

Dr. Liu has 15 patents issued and nine patents pending. Nearly all of his patents are in antenna areas, either for mobile applications, such as cell phones, cars or laptop and handheld devices.

“The patents I have in IBM laptops,” Liu explained, “are for antennas all placed around the laptop.
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Dr. Ahalt will retain his role as EE professor, where he has been a faculty member since 1987, and will continue his research program there. His research expertise involves signal processing, data compression, and neural networks, specifically in high performance computing.

“I believe that Stan’s appointment will help strengthen the collaboration between the Department and OSU,” Chair Yuan Zheng of the OSU Department of Electrical Engineering said.

For several years, Dr. Ahalt worked as academic lead in signal information processing in the Department of Defense High Performance Computing Modernization Program’s Programming Environment and Training (HPCMP PET) initiative. His active research program brought more than $4,000,000 in research funding through his collaborations with the Army Research Laboratory, Wright Patterson Air Force Base, and the Defense Advanced Research Projects Agency (DARPA). In addition to the National Science Foundation, National Institutes of Health, and industrial partnerships.

“During his tenure as Chair of the University Steering Committee, Dr. Ahalt has proven his skill as a diplomatic and honest leader,” said Karen Holbrook, OSU President. “He is an excellent choice as OSU’s new Executive Director.”

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When we placed antennas around the edges of laptop display inside the cover, we minimized interference and improved performance.”

He is now engaged in varied research and product design projects, including home power line and phone line networking, antenna design, and high speed packaging. Other current projects include antenna designs for IEEE 802.11a/b/g, UWB, multiband WAN (cellular technology) used in laptops, 60 GHz NASA project antenna and chip packaging for inter-satellite communications.

Dr. Liu has published more than journal and conference papers. His research interests are antenna design, electromagnetic modeling, digital signal processing, and communications technology.

“Duixian was my first PhD student in 1988,” Professor Randy Moses of IPS Lab recalls proudly. “His design of the wireless antenna now embedded in all IBM laptops has been immensely successful.”

Liu received the BS degree from XiDian University, Xi’an, China, in 1982, and the MS and PhD degrees, all in electrical engineering, from The Ohio State University, in 1986 and 1990 respectively.

He grew up in a rural area of Xi’an, China, one of five children of farmers Huiyi Liu, now 87, and his wife, Yumin Liu, both of whom worked their two-acre farm plot. Qualifying for the university entry exam in the first year following China’s Cultural Revolution, young Duixian was one of only two students in his class to meet the standard for entry into a university.

“The good part at that time,” Dr. Liu recalled, “was that you did not have to pay for tuition and housing, and received money for food and other expenses from the government, according to family income. Today, more than half of all high school students attend college, but they have to pay for everything.”

At XiDian University in Xi’an, he ranked first in a class of more than 50 students throughout the four-year undergraduate program, and was one of only eight students among 4,000 to receive a government scholarship to study abroad.

Assigned by the government to study electromagnetics and antennas, Liu chose Ohio State University because it was one of the world’s five most outstanding universities in these fields.

While attending OSU, he was introduced by friends to Shuang Huang, who earned her BS degree at Wright State University, and later received the MS degree in computer science at Polytechnic University, New York. They are parents of Angela, 5, and Christopher, 2. Playing with his children ranks high among Dr. Lui’s interests, which also include jogging and reading.

Among his career goals, Dr. Liu aspires to be a “true authority in mobile/small antenna design and high-speed packaging.” His job, he says, offers the flexibility, mix of research and development, and diversity of research areas needed to help achieve his goal.

To the question, “What advice would you offer current EE graduate students?” Duixian draws out of his 13 years of career experience the suggestion to “get more practical, hands-on experience. Also, work in R&D centers and companies in the summertime.”

If he could revisit his own career path, he would concentrate on the “more practical aspect of communication and signal processing areas.”

From his experience, he has distilled these key guidelines for selecting successful team members: 1) strong academics with practical experience; 2) a stronger team leader; 3) very independent (it’s important to be able to initiate and work all by yourself); 4) very productive, and 5) hardworking-all traits which Duixian Liu has demonstrated on his long journey from a small Chinese farm to a successful career of cyber-innovation.

Editor’s note: this is the seventh in a series of IPS alumni profiles.

Wedding Announcements

Ulku Baysal, M S02, married Ozgur Oktem in June, 2003. Ulku is working at Aselsan Inc., Ankara, Turkey. Ozgur is an assistant professor of physics at Bilkent University, Ankara, Turkey.

Heelim Teh, B S03, (OSU) married Wenchin Fanchiang on December 11, 2002, in Columbus, Ohio. Heelim is continuing the Master’s degree program at OSU.

Dushyanth Krishnamurthy, M S02, married Anita Narasimhan on September 8, 2002 in Los Angeles, CA. Dushyanth is pursuing a Master’s in statistics at UCLA.

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8 Earn Masters Degrees

Eight IPS graduate students have earned their Master's Degrees. The group includes two residents of the U.S., one from the Republic of China, and five from India.

The M.S. graduates are:

- **Wendy Garber** earned her BSEE at the University of Cincinnati, Cincinnati, OH, and is a resident of Middletown, OH. Her thesis was entitled, "Self Localization of Sensor Networks." Wendy is now employed at Mission Research Corporation, Dayton, OH.

- **Guohua Jing** did his undergraduate work at Nanjing University of Aeronautics and Astronautics, and comes from Danyang, China. The title of his thesis is "Initial Characterization of MIMO Radio Channel." Guohua will continue his studies, pursuing the PhD.

- **Parna Khot** earned her BE at Maharaja Sayajirao University, Vadodara, India. Her thesis is entitled, "MATLAB-Socket-MPI & A Parallel Data Mining Toolbox Using MATLAB MPI." Parna is pursuing the PhD.

- **Madhuri Keddyundoor** earned her undergraduate degree in electrical engineering at Chaitanya Bharathi Institute of Technology in her hometown, Hyderabad, Andhra Pradesh, India. "Parallel Processing of Simulink Models" is the title of her thesis.

- **Adam Margetts** did his undergraduate work at Utah State University, Logan, UT. His hometown is Farmington, UT, and his thesis is entitled, "Equalization of Downlink Multirate Wideband CDMA." Adam is currently at OSU, pursuing the PhD.

- **Vivek Rajendran** received his undergraduate degree at the University of Madras, in Chennai, India. "Discrimination of Dynamic Frequency Sounds and Multi-Channel Detector Model," is the title of his thesis.

- **Siddharth Samsi** is a graduate of the Government College of Engineering, Pune, India. A native of Pune, India, Siddharth's M.S. thesis was, "A Java Based Web Interface to the MATLAB Computation Engine." He is now at OSU, pursuing the PhD.

- **Gene Whipps** did his undergraduate work at OSU; he entitled his thesis, "Coupled Harmonics: Estimation and Detection." Gene is currently working at the Army Research Laboratory, Adelphi, Maryland.

Collaborative Innovation Aids Hearing Impaired

**Ashok Krishnamurthy**, Associate Professor of Electrical Engineering, along with Professors Lawrence Feth and Stephanie Davidson of the Department of Speech and Hearing Science, received an SBC Faculty Research Grant for 2003-2004, for their proposal "Real Time Telephone Communication Device for Elderly Individuals with Hearing Loss."

The First IPS Research Forum, hosted by IPS graduate students, was held on October 23, 2003. This half-day forum allowed IPS graduate students to share research ideas and goals with their peers and new EE graduate students.
Li, Rajagopal, Rigling Earn PhDs

Three doctoral candidates completed their academic work and were awarded the doctorate degree in the last two terms.

Honglin Li PhD, MS98, University of Science and Technology, Beijing, China, has accepted a position as a tenure-track Assistant Professor, North Dakota State University, Fargo, N D, in the Department of Computer Science. He hails from Luoyang, Henan Province, Republic of China. His dissertation was entitled, “Hierarchical Video Semantic Annotation.”

Ravi Rajagopal PhD, M S00 (EE), M S02 (Math), is a native of Coimbatore, India. His dissertation addressed, “An Algebraic View of Multidimensional Multiple-Input Multiple-Output Finite Impulse Response Equalizers.”

Brian Rigling PhD, M S00, is a native of Fairfield, OH. Brian’s dissertation topic was “Signal Processing Strategies for Bistatic Synthetic Aperture Radar.” He has joined the staff at Northrop Grumman, Baltimore, M D.

C. R. Rao Speaks at Stats, EE

Dr. Calyampudi R. Rao, Eberly Chair Professor of Statistics at Pennsylvania State University, presented the May 13 IPS seminar, “Kalman Filtering and Multi-target Tracking.” Dr. Rao was in Columbus to deliver the 16th Annual Rustagi Memorial Lecture hosted by the OSU Department of Statistics. Dr. Rao is internationally acknowledged as one of the pioneers who laid the foundation of modern statistics. He earned the PhD and ScD at Cambridge University, and has been awarded 27 honorary degrees from colleges and universities across the world, including a Doctorate of Science from The Ohio State University in 1979.