ECE Grad Brings Top-Notch Analog Design to Greenville

Successful Clemson alumnus Travis Summerton (BS Electrical Engineering, summa cum laude, 1991; MSCE, 1993) is returning to South Carolina with high-tech design work in hand. Summerton, a Senior Member of the Technical Staff (SMTS) and former branch manager in Texas Instruments’ (TI) wireless business unit, will be opening a TI Design Center in the Greenville area in early 2007. The Design Center will be dedicated to creating analog control circuits for a wide range of end equipments, and will require the efforts of staff engineers who have yet to be hired.

Summerton went to work designing very large-scale integration (VLSI) analog circuits. In order to build a team dedicated to system power engineering, he hopes to hire local talent who want to stay in this area.

“TI is one of the world’s leading semiconductor companies, providing innovative digital signal processor (DSP) and analog technologies to meet real-world signal processing requirements for communication, computer, consumer, automotive, industrial and other applications. As the market’s leading provider of power supply and power management integrated circuits, TI offers the broadest portfolio of solutions for battery- and line-powered designs. Headquartered in Dallas, Texas, the company has manufacturing, design and sales operations in more than 25 countries.

Summerton is married to the former Debbie Gordon, who received her PhD from Clemson in Mathematics in 1997. The couple lives with their three daughters near Paris Mountain, where they enjoy a variety of outdoor activities.

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Pursley Honored With Investiture

On the evening of Tuesday, October 3, Dr. Michael Pursley was honored in an Investiture of Endowed Chair Professors ceremony and dinner. At the ceremony Pursley was presented a Clemson University Endowed Chair Medallion.

The Clemson University Endowed Chair Medal is an elegant and distinctive symbol of the University’s most prestigious academic positions. The bronze medallion is presented to each endowed chair donor and to each faculty member appointed to an endowed chair.

The face of each medallion bears a sculpted image of the University seal rising above the flat plane of the surrounding metal. The words “ENOWED CHAIR” are engraved into the metal along the medallion’s top outer edge. Information specific to the respective endowed chair is laser-etched into the reverse sides of each medallion.

Attached to a ribbon of Clemson colors, the medallion may be worn during the University’s official functions. Further, each medallion is encased in a handsome shadow-box format for display when not in use.

Pursley was named to the Milburn W. and Betty M. Holcombe Chair in Electrical and Computer Engineering in 1995. His research is in the general area of wireless communications, application of error-control coding, adaptive protocols for packet radio networks and mobile sensor communication networks. He is the author of two textbooks, Random Processes in Linear Systems and Introduction to Digital Communications.

Elected to the IEEE in 1982, Pursley is a member of the Editorial Advisory Board for the International Journal of Wireless Information Networks, a senior editor of the IEEE Journal of Selected Areas in Communications and a distinguished lecturer for the IEEE Communications Society. He has been awarded an IEEE Centennial Medal, the Electronic Peach tree paper award, the IEEE Military Communications Conference Award for Technical Achievement, an IEEE Millennium Medal and the IEEE Communications Society’s Edwin Howard Armstrong Achievement Award. Among his many Clemson honors are the College of Engineering and Science’s McGovern Qualification Faculty Achievement Award and the Alumni Award for Research.

ECE Welcomes Todd Hubing, Michelin Professor of Vehicular Electronics

ECE is pleased to welcome Dr. Todd Hubing as the Michelin Professor of Vehicular Electronics. Hubing was born and raised in Wisconsin. He received his BS in Electrical Engineering from the Massachusetts Institute of Technology in 1980, a MS in Electrical Engineering from Purdue University in 1986, and a PhD in Electrical Engineering from North Carolina State University in 1988. After earning his MS degree, Hubing worked at IBM in Raleigh, NC and started taking classes at North Carolina State. When he and his wife, Nancy, also earned her PhD in Electrical Engineering at North Carolina State, they decided to look for academic positions. The couple interviewed at several schools and eventually chose the University of Missouri at Rolla (UMR), where they would stay for the next 17 years. The couple has two children, Lindsey, who lives in Wisconsin, and Garrett, who is attending school in Germany majoring in Linguistics.

Hubing’s research focus at UMR was electromagnetic compatibility (EMC). While working at IBM he saw a growing need for research in this field that was not being met by university laboratories. Today, Hubing believes there is a similar opportunity in the field of automotive electronics. “New electronic systems are added to automobiles every year but basic questions regarding the best way to make all these systems work together are not being adequately addressed.”

Computer circuitry in today’s automobiles can interfere with intentional radio receivers. Radio transmitters can interfere with computer circuitry, and some electronic systems can interfere with others in the same vehicle. Similarly there are computers, transmitters and receivers in today’s vehicles, the design process needs to account for all possible interactions or car owners and dealer service departments will suffer a myriad of problems. For instance, customers of one automotive company were returning their cars to the dealer when the ‘check engine’ light displayed. The dealerships were finding that the catalytic converters had burned out. After several occurrences of the same problem it was discovered that electromagnetic interference was causing the engine to misfire and the gas was getting into the exhaust system.

In another instance, when a car owner leased their newly installed nav radio transmitter it destroyed the engine controller board (a $50,000 part). The dealership replaced three engine controller boards before the customer gave up and bought an automobile from a different company.

Hubing notes that the rapid increase in the number of computers and wireless devices being used in today’s vehicles makes it increasingly difficult to ensure that everything will work successfully together. “Thus, there is a need for a systems integration approach in automotive design and engineering.”

Clemson’s ECE department has faculty that are highly regarded experts in power electronics, networking, communications, embedded systems, controls, image processing, and other technologies that will play a critical role in the development of tomorrow’s automobiles.” says Hubing. “ICAR provides an opportunity to bring these faculty members together to do research that will help make future automobiles safer, more efficient and more reliable.”

Hubing’s office is currently in the Physics Daniel Building on campus, but when Clemson’s International Center for Automotive Research (CI-ICAR) is complete in Greenville, Hubing will also have an office on that campus. This will allow him to work closely with faculty and students both on the Clemson and CI-ICAR campuses.

Hubing enjoys playing basketball, which he does with a group of faculty who meet at noon on Mondays, Wednesdays and Fridays at Clemson’s Fike Recreation Center. In fact, Hubing notes he had a similar situation at UMR, so he was pleasantly surprised to find out about the Clemson faculty basketball group during his interview. Hubing notes he and his wife really like this area and since moving here have enjoyed hiking, boating and going to the beach. He also enjoys playing the guitar and writing humorous songs. But, Hubing says, his main hobby is work. “When I worked at IBM, I felt there was more of a ‘fun’ balance. I think at UMR it’s the same balance. I feel the research and teaching is more intense. So I’m not sure how he feels about research and teaching now? He says he’s thrilled to have a job where most of his time is dedicated to these activities. He is a pun as it is, ‘It’s the fun stuff!’

http://www.clemson.edu
Michael Pursley IEEE Distinguished Lecturer

This Fall Dr. Michael Pursley, ECE's Horizons Chair, gave a series of IEEE Communications Society Distinguished Lectures throughout the Midwest, including the Chicago area, Ames and Cedar Rapids, Iowa, Minneapolis and Rochester, Minnesota. Subsequent lectures were given in Blacksburg, Virginia, and Moncks Corner, South Carolina.

Pursley's presentation was “Protocols for Adaptive Modulation and Coding in Dynamic Spectrum Access Networks.” A protocol suite is presented for controlling transmitters in dynamic spectrum access networks. A framework is provided for the selection of the initial modulation and coding that will be used in a session after a frequency band has been designated. A new, power-adjusted protocol compares correlates for unpredictability in the propagation characteristics and interference in the designated band. Throughout the presentation, examples of the performance of German and English spectrum access networks in southeastern Pennsylvania and because of the potential at that time for German spectrum access networks to offer more bandwidth than the imperfect European spectrum for the dual-band. The German spectur access network operates in a wide range of modulations and channel models.

Providedly each IEEE Society as a service to local chapters, Distinguished Lecturer Tours can be arranged in response to requests from IEEE sections or local chapters. They may also be initiated by IEEE Region Directors, the Director of Meetings, or the President. The Distinguished Lecturer information and support is available via the Internet at http://www.ieee.org/training/lecturer/index.html or by contacting Dr. Pursley.

Kellers Receives Distinguished Service Award

Earlier this year the Clemson University Alumni Association presented five alumni with the Distinguished Service Award, the university’s highest alumni honor. The awards recognize individuals who demonstrate a lifetime contribution to the university and have had a significant impact on the value of the university for future generations. Service to church, community, profession and public service, and personal and professional advancement are recognized as a part of this service program.

This year’s award recipients include: Edward Hamilton, an outstanding staff member in our late 1980’s. Dr. Duke served as our President for twelve years, and he was a constant source of inspiration to our students. His name is a constant reminder that the value of a degree means something more than a license (or “meaner” which, until recently, I hated to explain that the term is mountainous, but the town of Cayuga is located on a large flat area of a mountain. Wang obtained his BS in Electrical Engineering in 1988 and MS in Electrical Engineering in 1988 (at the age of 20) from the University of Tennessee. He joined STT Communications in 1990 after completing his PhD at Stanford University in 1990. During the summer of 1994 Wang met his wife, Yvonne, and the couple was married in 1988.

After earning his MS and getting married, Wang began working at the Institute of Applied Electronics, which is part of the Chinese Academy of Engineering and Physics, and where he was promoted to Principal Engineer in charge of high-performance reconfigurable research. Wang and his wife then moved to Carnegie Mellon University, where he joined the Micro-Electronic Group. The couple’s first son, Shenghong, was born in 1992, and their second son, John, was born. Upon graduation from Clemson in 2002, Wang was hired at Assistant Professor at Southern Illinois University. Wang says the high quality of faculty members and students, the beautiful campus, the warm welcome and kindness he received from everyone, and the research facilities and opportunities at the Center for High Performance Computing are reasons why he chose Clemson was the place for him. He is also looking forward to the opportunity to teach in a world class research environment, which includes electronic devices, circuits and integrated systems. In his free time Wang enjoys soccer, hiking, playing ping pong and playing Go.

Wang notes that many of his teachers in China, as well as in the US, have helped him throughout his studies, and it is not possible to list them all. Perhaps the most influential teachers in his life are his parents, who did so much to help him get where he is today. Some of the teachers who taught him in high school, his undergraduate and graduate school. The couple has three children, Allison, who is an Electrical Engineering student at Princeton University. Allison’s main interests are music, dancing, and jazz. One summer during their undergraduate years they even toured a southeast club circuit. The couple has delightful 3-1/2 year old twins, Jacob, who is an avid Clemson football fan with all the regalia including a jersey, hat and pants, and Paul, who is a little too young to do his own thing yet, but he is already showing signs of becoming a future fan. The couple has a 4 year old son, Jacob, who is an avid Clemson football fan with all the regalia including a jersey, hat and pants. In fact, they try as much as possible to make sure that he is not only able to watch the games, but also to do his own thing. Interested in finding out more about the world, Jacob enjoys spending time with his family, scrapbooking, making hats and bags, and dirt bike racing with his family. He also enjoys watching sports with his family, especially football, and baseball.

This year’s award recipients included Melissa Smith Join ECE Faculty

Melissa Smith Joins ECE Faculty

The ECE department is delighted to welcome Dr. Melissa Smith as an Assistant Professor. She was born and raised in Pensacola, Florida, where during high school she lived with her family on the beaches in Pensacola and Gulf Breeze. She neither had much trouble getting admitted to ECE, the university of her choice, nor was it hard for Melissa to choose her field of study, Electrical Engineering. The couple has a 4 year old son, Jacob, who is an avid Clemson football fan with all the regalia including a jersey, hat and pants. In fact, they try as much as possible to make sure that he is not only able to watch the games, but also to do his own thing. Interested in finding out more about the world, Jacob enjoys spending time with his family, scrapbooking, making hats and bags, and dirt bike racing with his family. He also enjoys watching sports with his family, especially football, and baseball.

Smith’s research is in the area of computer architecture, focusing on high-performance reconfigurable computing where FPGA’s are the primary platform. She earned her PhD from the University of Illinois at Urbana-Champaign in 1999. Smith’s research focuses on the development of energy-efficient high-performance reconfigurable computing systems. Her research group explores the design, implementation, and evaluation of high-performance, low-power, and high-precision reconfigurable computing systems. The systems she has designed include reconfigurable computing systems for multimedia, scientific computing, and automotive applications. She has also designed a reconfigurable computing system for optimizing energy consumption in wireless sensor networks.

Smith’s research is in the area of computer architecture, focusing on high-performance reconfigurable computing where FPGA’s (Field Programmable Gate Arrays) are used as computing devices or accelerators in conjunction with general-purpose processors. This research is critical to the efficient implementation of a wide range of applications, including data mining, machine learning, and computational physics. Her research has been funded by the National Science Foundation, the Army Research Office, and the Office of Naval Research. She has also been a consultant to several companies, including Intel, AMD, and IBM. Smith holds a PhD from the University of Illinois at Urbana-Champaign and a BS from the University of Tennessee. She is a member of the ACM, IEEE, and SIGARCH. She is also a member of the ACM, IEEE, and SIGARCH. She is also a member of the ACM, IEEE, and SIGARCH. She is also a member of the ACM, IEEE, and SIGARCH. She is also a member of the ACM, IEEE, and SIGARCH.

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