

Hands-on Projects Influence High Schoolers

Enrollments are down in electrical engineering nationally, and Ohio State is doing something about it. The Department of Electrical and Computer Engineering has launched a major outreach effort to middle and high schools. For starters, the senior capstone design class has developed a number of hands-on activities that can be done with a group of 30 students for under \$100. In one project, students build a circuit to light up their initials in LEDs. In another, they build a paper speaker that they can connect to their

... teachers and students want hands-on activities, not talking heads.

MP3 players. In a third, they build a blood pulse sensor out of a paper chip clip, an infrared LED and photodetector, and a simple circuit, to make a (visible) LED light up in synchrony with their heartbeats.

Last year, our students made 40 visits to 16 different schools. Combined with our support of summer engineering camps, we have reached over 1000 students in the Columbus area.

Our students have enthusiastically supported the program. In fact, the IEEE student chapter at Ohio State elected nine outreach officers last spring. We've been targeting schools in the Columbus area trying to visit women and under-represented groups in particular; however, we are happy to visit any school that wants us.

Now it's time to branch out. In talking with teachers, the single most consistent message we hear is

that teachers and students want hands-on activities, not talking heads.

There are many ways you can help. First, you can do some outreach in your area. You're welcome to use our ideas: go to <http://ece.osu.edu/about/outreach> to obtain directions, parts lists, and powerpoint presentations for all of our projects. Second, if you have ideas for new projects or if you want to develop a new project yourself just let us know and we'll share those, too. Or, third, for \$100 you could sponsor a kit or a school (most of the projects are re-useable).

For help, advice, or contacts, or if you want to come along with us to a school, contact Prof. Betty Lise Anderson, at anderson@ece.osu.edu.



Professor Anderson instructing student on circuits project during high school outreach visit.

Scholarships: Making an Impact

Today, more than ever, scholarships have a tremendous impact on students and their families. They can be the deciding factor in whether students are able to begin or continue their education and can impact how much time students can devote to their studies. Scholarships also show students that someone believes in them and their ability to make a difference. Three alumni who have established scholarships that impact the lives of electrical and computer engineering students are Robert Schmahl, Everett Shaffstall and Tom Thomas.

Robert & Joe-Ann Schmahl: Supporting Dreams

The Schmahls felt so strongly about the importance of advanced education as the key to the American dream, that they were involved in establishing not one but two scholarship funds.

Robert Schmahl (BSEE) began his professional career as a digital systems design engineer at Hughes Aircraft Company after graduating from Ohio State in 1961. He held many positions during his 31-year career at Hughes, including senior scientist. Today, he serves as the

Scholarships - continued on page 10.

Visit our new website at:
<http://www.ece.osu.edu>

A Message from the Chair

We are reviving our yearly ECE newsletter to our alumni with several goals in mind. The first goal is to inform you about some of the activities in the department. Secondly, we want to keep you up-to-date on alumni activities and the new ECE Alumni Society. Finally, we would like to share the past and present achievements of various alumni. Our department acts as a conduit for alumni updates because of our continuing interaction with alumni both personally and professionally. I encourage you to contact me with information about yourself for future newsletters.

Over the past three years as Chair of the ECE department, I have come to realize the great impact that our alumni have had on this country. In fact, I can arguably say we have done more for this country than graduates from any other ECE/EE department in the nation. For example, in the early 1900s Ohio State electrical engineers dominated the leadership in Westinghouse and worked closely with Nikola Tesla to make AC the winning technology over DC, which was championed by Thomas Edison. Benjamin Lamme (class of 1888) was the chief engineer at Westinghouse. He oversaw construction of the Niagara Falls power station, electrifying much of the east coast.

The achievements of our alumni are just too enormous to document here, but a common denominator that I have

found in talking to our most successful alumni is the importance of the education and training that they received at Ohio State. The strong technical emphasis in our program makes our students highly desirable and serves them well in both industry and the public sector. During this school year, we devoted much of our effort to preparing the new curriculum for the quarter-to-semester change coming in the summer of 2012. There will likely be a small decrease in hours needed to graduate, but the desire by our faculty to maintain a strong technical base in our program led to many of the core fundamental courses growing from one quarter to one semester. We have also made our program more flexible by adding many more courses to our approved elective list. Thus, our approach makes sure that students are grounded in the fundamentals, while allowing them to pursue customized course work for interdisciplinary interests without having to take additional credits beyond the minimum needed to graduate.

We are revising our sophomore year courses in digital logic, circuits, and signals/systems to make them more relevant to industry needs. Our new sophomore sequence will be three quarters long and will feature labs that are integrated with the lectures and a system-first approach (with circuits afterwards). The labs will be open and involve quarter-long projects such as

building music synthesizers, digitally controlled motors, and acoustic radar systems. We believe our approach will be unique in the nation with regards to lab experience and the use of learning technology for both lectures and labs.

I hope you will find this newsletter of interest and that you will stay connected with us in the future.

*Rob Lee
Chair, Department of Electrical & Computer Engineering*

Research Awards Reach Record \$25.3 Million

The ECE department has seen a phenomenal rise in research awards in the past three years: from \$15.5 million in 2006-2007 to \$19.2 million in 2007-2008 and peaking at \$25.3 million in 2008-2009. This past year (2009-2010) the research funding was a very healthy \$21 million, which places us near the top in the nation among ECE departments in terms of per faculty research funding. Much of this increase is due to successful proposals to the state and federal governments for large, center-level funding associated with research in sensors, electronic materials, energy, and communications. A major factor in receiving this funding is the increased national and international prominence of faculty members in the department and their relevance to many of the critical technology issues in this country. Our department continues to play a leading role in developing technology for national security, but in recent years we have also become a leader in developing commercial technologies in the areas of sustainable energy, medicine, transportation, and wireless communications. In the area of education, the department has begun collaborations with universities in developing countries to create new programs and enhance existing ones. Although funding for these education efforts are small right now, we expect to see significant growth over the next few years, especially in Asia and the Middle East. •



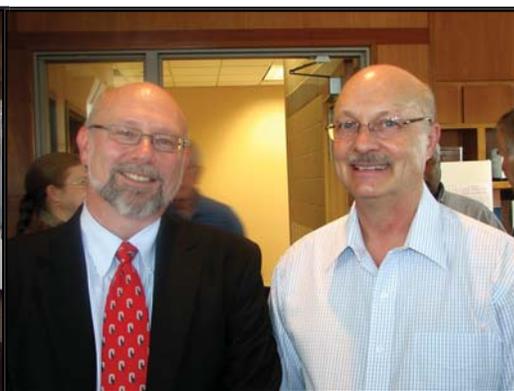
ElectroScience alumni in Thailand, October 27, 2009. Left to right: John Volakis (OSU ECE professor), Danai Torrungrueng (professor in Thailand), Titipong Lertwiriya-prapa (professor in Thailand), and Pravit Tulyathan (Technical Manager at Boeing).



ECE Retirees Recognized for Many Years of Service



Professor Emeritus P. Pathak (center front) with former advisees.



Professors Emeriti S. Ahalt and D. Orin



Professor Emeritus J. Cruz and his wife, Stella, with OSU President E. G. Gee.

Prof. Prabhakar Pathak received his PhD from Ohio State in 1973 and joined the faculty in 1981. He is regarded as a major contributor to the development of the uniform geometrical theory of diffraction (UTD) and has won numerous awards for his research contributions. Prof. Pathak was awarded the IEEE Third Millennium Medal from the Ant. & Prop. Society in 2000.

Prof. Stanley Ahalt has been an Ohio State electrical and computer engineering professor since 1987, co-founded the Information Processing Systems Laboratory, and served as executive director of the Ohio Supercomputer Center since

2003. He received the Ohio State Lumley Research Award in 1997 and the Ohio State College of Engineering Research Award in 1999. Prof. Ahalt accepted an appointment as director of the Renaissance Computing Institute and professor of computer science at the University of North Carolina at Chapel Hill.

Prof. David Orin joined Ohio State in 1981, achieving the rank of Professor in 1989. He is an IEEE Fellow (1993) and received the Expedited Award for Novel Research from NSF in 1987. As a teacher, Prof. Orin has received significant recognition from the students, including the College of Engineering Charles E. MacQuigg Award for Outstanding Teaching in 2003. Dr. Orin has returned

to Ohio State as Professor Emeritus to continue teaching and research in the area of robotics.

Prof. Jose B. Cruz, a noted control theorist, joined Ohio State in 1992 and is a former dean of the college of engineering. He is a member of the National Academy of Engineering and an IEEE Fellow. He has received numerous awards and recognition, including the 2009 IEEE Education Society Achievement Award, the 2009 James H. Mulligan Jr. Education Medal, and the Richard E. Bellman Control Heritage Award in 1994. Prof. Cruz has also been recognized for his work as a champion of diversity within the department and the field of engineering.

Newest Faculty in ECE



Professor S. Rajan

Siddharth Rajan joined the ECE department in October 2008 as an assistant professor with a co-appointment in materials science and engineering. Prof. Rajan received his B.E. from Birla Institute of Technology and Science and his PhD from UC-Santa Barbara. His current research interests include new innovations for high-speed, GaN-based electronic devices, studying new materials such as graphene and diamond, investigating the applications of GaN for biosensing, and studying photonic applications of GaN for photodetectors and photovoltaics.

Waleed Khalil joined the ECE department and the ElectroScience Lab in February 2009 as an assistant professor. He received his PhD from Arizona State University in 2008. Prior to joining Ohio State, he spent 16 years at Intel Corporation where he held various technical leadership positions in both wireless and wireline groups. His research interests span the areas of RF CMOS circuits and systems for mm-wave and THz applications. He is particularly interested in the development of front-end active and passive technology to enable low-cost and low power RF circuits covering over a decade of frequency range.



Professor W. Khalil

Spotlight on Alums

Ward Heinke, 1981

Mr. Heinke is Director of Cyber Defense for Raytheon's Information Security Solutions business. He entered the Air Force in 1983 after graduating from Officer Training School as a distinguished graduate. He spent most of his military career in communications assignments in a variety of positions at squadron, numbered Air Force, acquisition center, major command, Air Staff and Joint levels. Before his Air Force career, he worked in private industry as a test and development engineer for Avtron Mfg., Inc. of Cleveland, OH.

A retired Air Force colonel, Heinke came to Raytheon after serving as the commander of the 608th Air Force Network Operations Center at Barksdale Air Force Base, LA. His previous post was as deputy commander and chief of staff for the White House Communications Agency. He ensured that the president, vice president, Cabinet members, National Security Council, Secret Service and White House Military Office could communicate under any conditions, and from any location or platform worldwide.

One sticky communications situation Col. Heinke found himself in occurred in November 2006. His Master Control facility back in Washington, D.C. recorded the Ohio State vs. Michigan game for President Bush who was attending the Asian Pacific Economic Conference (APEC) in Vietnam. With no direct way to view the game, the video file was transmitted via satellite to a computer in Vietnam which was then viewed on the plane trip back to Washington, D.C. Everyone other than the President knew the outcome of the game so secrecy was vital - even between Col. Heinke and the President's military nurse, who each wore their respective college sweatshirts, Ohio State and Michigan, which gave the President a laugh. Ohio State (1) beat Michigan (2) 42-39 to clinch the outright Big Ten title.



Robert Williams, 1959

While at Ohio State, Mr. Williams worked part-time in the Electron Devices Laboratory, then directed by Professor E. M. Boone. This opportunity led him to a career in electro-optical sensors. He retired from ITT Corporation's Electro-Optical Products Division in Roanoke, VA as Vice President of Business Development having had the opportunity to be a part of a team that resulted in ITT becoming the world's leading producer of night vision devices.

Mr. Williams is the founder of the OSU Club of Southwest Virginia which was chartered in 1998. He served as its president for seven years and secretary for another four years. The club currently has about 100 members and has awarded \$21,000 in scholarships since 2005. At the 2008 OSU Alumni Association's annual Alumni Leaders' Conference, he had the honor of being named a 2008 Best Buckeye. He currently resides in Roanoke, VA with his wife Jeanette.

Russell Stoner, 2008

Mr. Stoner currently lives in San Diego, CA and works as a nuclear engineer for the United States Navy. As a Nuclear Engineer with Puget Sound Naval Ship Yard (PSNS) he is earning a PSNS equivalent of a master's degree in nuclear engineering while working an intense, fast-paced, demanding job. In preparation for the nine-month Nuclear School, he attended two four-month on-site training programs at Naval Air Station in Coronado, CA and U.S. Fleet Activities in Yokosuka, Japan. He is pursuing a medical degree to integrate medicine and engineering as he did on his senior thesis project with Professors Bradley Clymer and George Billman (College of Medicine).

In addition to many other personal interests, Mr. Stoner is fundraising chairman for Engineers Without Borders, coaches a youth soccer club, and volunteers at the local hospital.





Walter Davis, Jr., 1959

Vice Admiral (VADM) Davis received his commission June 1959 through the Ohio State Naval Reserve Officer Training Corps (NROTC) program and was designated a Naval Aviator in December 1960. He served Vietnam combat tours and accumulated over 3,500 flight hours and over 800 carrier landings. He is the highest ranking naval officer to graduate from Ohio State's NROTC.

VADM Davis' last Navy assignment was N6, Deputy Chief of Naval Operations for Space systems, Information Warfare systems, Command and Control Systems, and Modeling and Simulation where he developed, justified and directed Navy's IT budget. His operational assignments include Navy fighter pilot, F-14 Squadron Commander (VF-114), Aircraft Carrier Commanding Officer (USS Ranger), and Battle Group Commander. His shore duty assignments were engineering positions including Navy Engineer for the F-14 aircraft and Naval Warfare IT Architect.

After Navy, VADM Davis served as a Vice President at BAE Systems and was co-founder of E-fire. He is now a Director at CommNexus.

George Hoddy, 1926/1932

While working on his master's degree at Ohio State, Mr. Hoddy studied in the field of small electric motors.

After working for prominent leaders in the field, such as Charles Kettering of GM, Mr. Hoddy, his three brothers, and two others built a new company in the 1940s, called Universal Electric. There, they designed and developed a special, governor controlled, gyro motor for use in military aircraft. They received many government contracts and the company gained national prominence for its war efforts and manufacturing excellence. During the war years, Mr. Hoddy travelled secretly to New York for weekly meetings to discuss war projects, such as the Manhattan Project, which utilized his motors.

After the war, Universal Electric produced millions of small electric motors for domestic home appliances. At one time, a Universal Electric motor was in one out of ten homes in the U.S. The Universal family included more than 2,000 employees - over 800 in Owosso, MI alone.

The company went through several merges and purchases from 1969 to 1999, and finally closed its 200,000 square-foot plant in Owosso in 2005. *From the article "Shiawassee County's Favorite Son".*



Mr. Hoddy resided in Owosso, MI until his recent death in June 2010 at the age of 105.



Darwin Renner, 1932/1934

During World War II, Darwin Sprathard Renner was instrumental in sinking German U-boats and keeping the company that would become Texas Instruments Inc. afloat.

As the company's only laboratory electrical engineer in 1942, he designed the Navy's first working submarine-hunting device. The project is credited with helping reduce Allied shipping losses to U-boats and started the transformation of Dallas' Geophysical Service Inc. into Texas Instruments.

Mr. Renner died Sept. 16, 2009 at the age of 98 of an apparent heart attack while preparing to visit his business, Geotronic Labs Inc., which he founded after leaving GSI in 1947. *From The Dallas Morning News, 9/26/09.*

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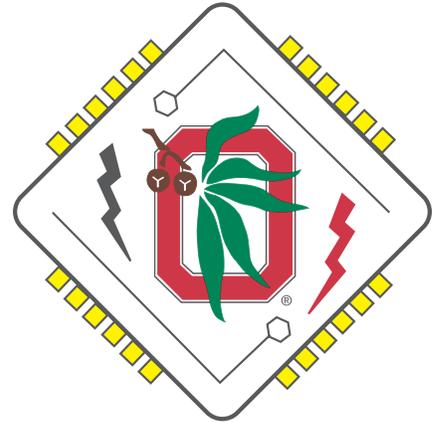
EE/ECE Alumni Society

It is going to be another wonderful day, as once again I woke up this morning and got out of bed. Sometimes we have to step back from everything that is going on in and around our life and look at what really matters. Simplify our expectations. Assign priorities to those things that affect our lives. Understanding that we choose how we define our own lives.

I choose to look at things in a positive light. One of the things that I consider a positive in my life is my involvement with the ECE Alumni Society. The society has given me an opportunity to meet more people in my field and to make a positive impact on the world around me. As the society enters into its second year growth has been slow, but we are making progress. I've had to adjust my sights a couple of times but realize that as a volunteer-based organization things usually take longer than expected.

I was hopeful that I would be able to tell you wonderful things about our new website but like the bathroom in my house it is still under construction long after we had hoped. I can tell you that it's planned to be a flexible tool for which I hope everyone will find some use. With over 9,000 members it will be a portal to networking, job hunting and updates on what is going on in the society and within the ECE department at The Ohio State University.

I want to congratulate the lottery winners of the Ohio State vs. Miami, FL football game tickets. I'm looking forward to seeing many alums at the OSU Reunion Weekend in September, a great football game and introducing my nephew to the Ohio State campus. Even if you did not win the lottery, we hope



EE/ECE Alumni Society
The Ohio State University
Alumni Association, Inc.

you will join us at the society meeting and the tailgate BBQ that follows.

Always remember this is your society, and to get the most out of it you have to help us by being involved. Let us know what you would like your society to be.

*Respectfully,
Jac Fought, Society President*

Go Bucks!

So you want to become a member of the EE/ECE Alumni Society? **You already are!**

If you are a graduate of the Department of Electrical and Computer Engineering (ECE), formerly EE, you are a member of the EE/ECE Alumni Society. While it is currently a non-dues paying society, plans are to add special benefits for those who become dues-paying members. We will keep you informed as those details get worked out.

As a member, please join us for any of our alumni events, attend our annual general meeting of the society, and let us know how you would like to stay connected to other alums, and current and future ECE students. We are also on the lookout for future board members able to donate their time and talents to further the mission of the society as current board terms expire. If interested, please contact the society's secretary, Bradley Clymer, at clymer@ece.osu.edu.

Stay Connected. Make Ohio State Stronger.

ElectroScience Laboratory, Industry Partner on Facility Expansion

By Candice Clevenger

The ElectroScience Laboratory is reinventing itself to incorporate a model where private companies and public universities work together under the same roof.

The new 40,580-square-foot Wireless Communication/Radio Frequency Research Building is scheduled to open in spring 2011 and will connect to and complement the existing ElectroScience Laboratory.

Almost 70 years ago, the ElectroScience Laboratory was created as a government-sponsored research facility to satisfy national defense needs in wireless communications, radars and optics. Since then, the lab has evolved into a center of excellence in the College of Engineering with a legacy of teaching, scholarship and cutting-edge research.

Having outgrown its aging 55-year-old home, the ElectroScience Laboratory has partnered with the Science and Technology Campus Corp. (SciTech) to occupy space in a new \$7.3 million Wireless Communication/Radio Frequency Research Building. SciTech, the university-affiliated developer of the building, began construction on the 40,580-square-foot facility in fall of 2009, with completion expected in early 2011. A covered walkway will connect the new facility to the existing ElectroScience Laboratory building, where ESL's laboratories, anechoic chamber, cleanroom and other research equipment will remain.

In addition to providing a modern space to house ESL's 130 faculty, researchers, staff and students, the new facility will also support novel research partnerships. It will enable individuals from private industry to have direct access to the best faculty and researchers in the country in electromagnetics, sensors, wireless communications and optics/photonics, as well as expensive and specialized research facilities.

"We expect these unique research partnerships to launch spinoff companies that develop new technology, leading to commercialization of university research and increased research funding for the ElectroScience Laboratory," Interim Engineering Dean Gregory N. Washington says, adding that the partnerships offer additional opportunities for internships and jobs for students.

Along with gaining hands-on experience and working with industry partners to solve real-world problems, ESL's graduate and undergraduate students will benefit from new and expanded resources to support their education and research, including a computing facility, multimedia creation room and interactive conferencing room.

"This critically needed new space will enable the ElectroScience Laboratory to continue to attract world-class faculty and students, strengthen ESL's legacy of innovation, teaching and scholarship, and ensure pre-eminence in research for decades to come," says John Volakis, director of the ElectroScience Laboratory and professor of electrical and computer engineering.

The construction of the new facility is supported by nearly \$5 million in Ohio Third Frontier funds obtained via the Institute for Development Commercialization of Advanced Sensor Technology (IDCAST) and the Third Frontier Ohio Research Scholars Program, both led by Larrell Walters at the University of Dayton. Alumni donations and the Ohio State College of Engineering provided the remaining funds needed to construct the new building.

Read more about the new facility and view construction photos at <http://electroscience.osu.edu/14728.cfm>.

The new Wireless Communication/Radio Frequency Research Building is slated to open in early 2011. The east end of the building (right) will provide modern work and collaboration space for faculty, researchers, staff and students, who will move from the current ElectroScience Building. The west end of the building (far left) will provide rentable laboratory space for established and start-up companies.



Hooshang Hemami: Artist, Scientist

If students were asked to describe a typical engineering professor, the words painter, artist and poet are unlikely to be included in their depictions. These words do accurately describe Professor Hooshang Hemami, however, who credits his interests in painting, writing poetry, playing soccer, and reading philosophy and psychology as being critical to his success as a scientist.

“When I have had physical activity, I think better, I see better, I make less programming errors,” says Prof. Hemami. “Painting has also been a sort of complement to my work, because my work is very directed; things have to work, make sense, be stable, be believable. I don’t have any of these constraints when I paint.”

Prof. Hemami earned a bachelor’s degree in electrical and mechanical engineering from the University of Tehran and moved to the U.S. in 1958. After receiving a master’s degree from MIT and working in industry for two years, he came to The Ohio State University in 1965 as a research associate and doctoral student. Prof. Hemami



Professor Hooshang Hemami

graduated with a PhD in 1966, and has been teaching at Ohio State ever since.

“I’ve always had good students, good collaborators and good colleagues here at Ohio State,” says Prof. Hemami.

In his 44 years as a professor, Prof. Hemami has advised 30 PhD students and more than 60 master’s students. He is so highly regarded by students that they have awarded him the Fred H. Pumphrey / Eta Kappa Nu Distinguished Teaching Award four times.

A prolific researcher, Prof. Hemami is interested in understanding human movement. Following the realization that he was too squeamish for medicine, Prof. Hemami became interested in combining his interest in medicine with experimenting on a computer. He is currently conducting research on an artificial spinal cord for robots to help people with spinal cord injuries.

A proud father and grandfather with two daughters and two grandchildren, his future plans don’t include retirement just yet.

“There’s still too much research to do!” says Prof. Hemami.

The H.C. Ko Meritorious Service Award



H. C. Ko

The H.C. Ko Meritorious Service Award was created in 2008 by Professor Emeritus H. C. Ko and is given to a member of the ECE family in recognition of outstanding contributions to The Ohio State University Department of Electrical and Computer Engineering as a teacher, administrator, advocate and mentor for students.

One recipient is chosen each year and receives a plaque as well as a cash award.

Professor Emeritus F. Carlin Weimer, who served the department from 1941 to 1983, received the first award for personifying the spirit of service to the university, to the field of electrical engineering and to the student body.”

At the 2009 alumni reunion, staff retiree Gene Sapp received the award “for his contributions to the department as a student, staff member, and alum.”



F. Carlin Weimer

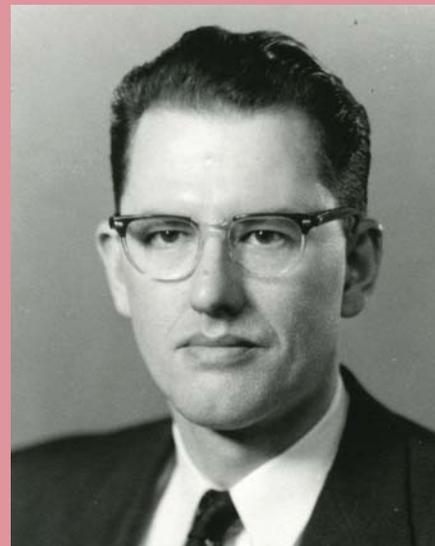


H.C. Ko, Rob Lee, and Gene Sapp

The Marlin O. Thurston Memorial Fund

The Department has established the Marlin Thurston Memorial Fund to recognize the many achievements of Prof. Thurston as an educator, researcher, and leader. As the Department Chairman of Electrical Engineering at The Ohio State University, Professor Marlin Thurston worked tirelessly to make the department better. He oversaw many changes to the curriculum and upgrading of the labs. He also enabled faculty to develop high quality research programs. He cared deeply about the department, so it is only appropriate that we establish a fund that both honors his past contributions to the department and the students as well as continue his efforts to improve the department.

The goal of the fund is to establish an endowed professorship in the department. Until the endowment reaches \$1 million, the distribution of the funds will either be invested back into the endowment or used for student scholarships. Prof. Thurston's former students have volunteered to lead the fundraising effort. Dr. John Swartz will chair the effort and Drs. Bami Bastani and Marv White will also serve. Visit <http://ece.osu.edu/marlinthurston> for more information or to make a donation. If you have any questions, please contact Margaret Dodd at dodd@ece.osu.edu.



Marlin O. Thurston, 1918-2007

ECE Professors Remembered



Benedikt A. Munk, d. March 13, 2009

Benedikt (Ben) Munk received his PhD in electrical engineering from Ohio State in 1968.

His research career at the department's ElectroScience Laboratory (ESL) included stealth technology focusing on advanced radome concepts as well as very wideband and radar-invisible antennas, for which he was world famous.

In 1971 he achieved the rank of full professor, advised over 40 MS and 22 PhD students, and became Professor Emeritus upon his retirement in 1999.

Among Prof. Munk's many accomplishments, he was widely published, held several patents, authored three books, and was a Life Fellow of IEEE.



Leon Peters, Jr., d. April 23, 2009

Leon Peters, Jr. received his PhD in electrical engineering from Ohio State in 1959, specializing in radar and electromagnetics.

He soon joined the faculty and became a full professor, supported more than 50 PhD candidates, and became Professor Emeritus upon his retirement in 1993, where he continued to be active in sponsored research.

His research career at the department's ElectroScience Laboratory (ESL) spanned over 50 years where he pioneered several related topics and was appointed its director from 1983-1994.

Prof. Peters received many professional honors, was widely published, and was a Life Fellow of IEEE.



Claude Earl Warren, d. January 10, 2009

Claude (Earl) Warren received his MS degree in 1940 from the Massachusetts Institute of Technology in electrical engineering. In 1945, he joined Ohio State's electrical engineering faculty and retired with emeritus status in 1981.

Prof. Warren studied the area of statistical communication theory. Through his efforts the department formed a foundation in communication theory that continues to serve us today.

Prof. Warren supported the research of more than 40 theses and dissertations. He had an exceptional ability to relate to, communicate with, and inspire young engineers.



Robert and Joe-Ann Schmahl

Scholarships - continued from page 1.

College of Engineering representative to the Ohio State Alumni Advisory Council, is a current board member of the OSU Orange County/ Inland Empire (CA) Alumni Club, and is a board member of the Los Angeles Chapter of the Society for Information Display. After moving to California, the Schmahls worked with the nearby alumni clubs to start a scholarship for local students. After that scholarship was established, the Schmahls decided they wanted to do more.

“We both believed we must pay back some of the benefits from the lifestyle that we achieved from my education at Ohio State,” Mr. Schmahl said.

Mrs. Schmahl, who never forgot her own childhood struggles, remained committed to guiding and supporting students. Mr. Schmahl believed that the U.S. was not keeping up with the rapidly expanding worldwide technologies and wished to support undergraduate engineering students. In addition, he hoped to provide some incentive and support to former U.S. Veterans. In 2007 the Schmahls established the Robert H. and Joe-Ann Schmahl Engineering Scholarship Fund.

Mrs. Schmahl—a lifelong, avid supporter of the Buckeyes—passed away on April 10, 2007. Mr. Schmahl made a generous donation to the new Ohio Union in her honor. The Union’s Joe-Ann Schmahl Memorial Suite is named after her.

Everett Shaffstall: Paying it Forward

Everett Shaffstall (BSEE 1963, MSEE 1963) knows the impact that scholarships have on students’ lives firsthand. In fact, he may not have been able to complete his education if not for the multiple academic scholarships he received during his time at Ohio State, including the prestigious Benjamin Lamme Scholarship.

After graduation, Mr. Shaffstall worked for Sandia Corporation before joining Hughes Aircraft. During his six years at Hughes, he performed digital analysis and design for satellite, military and commercial applications. After moving to Indianapolis, he started Shaffstall Corporation to manufacture and market products he designed for the graphic arts industry. Today, he serves on the board of Bacompt Systems and as membership chairman of the Arizona Seniors Golf Association.



Everett Shaffstall

One of the scholarship award letters Mr. Shaffstall received while at Ohio State included a note about the importance of paying it forward: “We sincerely hope that someday when you are successful you will remember that there are fine men and women like yourself who may need your help.” And help he did when he established the Everett L. Shaffstall Electrical Engineering Scholarship Fund in 1976.

“I am very appreciative of the help I received and that is why I have established my scholarship fund to help deserving students with their education.”

Tom Thomas: Investing in the Next Generation of Engineers

The scholarships that Tom Thomas (BSEE 1966, MSEE 1966) received while he earned his degrees in electrical engineering at Ohio State had such an impact on him that he still remembers their names more than 40 years later.



Tom and Jan Thomas

Mr. Thomas spent his 35-year career building highly successful computer software and service companies. He has held executive management positions at five firms and has personally managed every functional area within a software/ services company. By 1990, he was owner and CEO of Creative Solutions, Inc., which provides a comprehensive suite of PC software products to more than 75,000 U.S. accounting firms. He sold the company to the Thomson Corporation in 1998 and retired in 1999.

As his career progressed, Mr. Thomas became concerned that there were not enough U.S. students willing to tackle the challenges of earning an engineering degree. He established the Thomas L. Thomas Engineering Scholarship Fund in 2008 to support students who have the ability and drive, but insufficient resources to follow in his footsteps.

“I want to invest in talented students who need financial help and who are going to stay and use those skills here in this country,” Thomas said. “I really think engineering skills are a vital part of our long-term national security and the country’s progress, and I want to play a small role in encouraging students to pursue engineering dreams.” •

The Department of Electrical and Computer Engineering, a leader in electrical and computer engineering education and research, is dedicated to providing an outstanding educational and research environment. Generous support from our alumni and friends is crucial to our continued success. Your gift can support a particular activity or area of interest, including:

- **Supporting ECE students' educational expenses**
 - **Enhancing overall program offerings**
- **Maintaining our education and research facilities**



WAYS TO GIVE

There are many ways to give to the department, including establishing an endowed or support fund, or contributing to the ECE fund of your choice. Visit <http://ece.osu.edu/alumni/support> to donate online to a particular activity, and to see a list of recent donors.

ESTABLISHED ENDOWMENT FUNDS OR FUNDS ON THEIR WAY TO BECOMING ENDOWED

Robert B. Bockstiegel and Viola V. Bockstiegel Memorial Scholarship Fund (600602) Established in 1992 by the estate of Viola Bockstiegel.

Prof. Kenneth J. Breeding Memorial Scholarship Fund (691801) To provide merit based scholarships for students enrolled in the undergraduate major in electrical and computer engineering.

John F. Byrne and Perry Okey Memorial Scholarship Fund in Electrical Engineering (601018) Established in 1983 by the family and friends of John F. Byrne.

Frank C. and Louise Orton Caldwell Memorial Fund (601025) Established in 1954 by his wife, Louise O. Caldwell and friends of Frank C. Caldwell, former professor and chair of electrical engineering. In 1991, this fund was merged with the Frank Cary and Louise Orton Caldwell Scholarship which was established in 1970 by Carolyn Kramer Serling and Rod Serling.

Lowell C. Hoelle Memorial Scholarship Fund in Electrical Engineering (643237) Established in 2000 by gifts from his wife, Mrs. Mary S. Hoelle, and his sons, John L. and Thomas S. Hoelle, in memory of Lowell C. Hoelle (BEE, 1940).

Ed Wing-Kui Kan Memorial Scholarship Fund (643500) Established in 2000 by his wife, Kris Kan, in memory of Ed Wing-Kui Kan (BSEE, 1981).

Harold F. Mathis Memorial Scholarship Fund (604530) Established in 1986 by his wife, Lois R. Mathis (PhD Edu 1965), his son, Robert F. Mathis (PhD Math 1969) and his daughter, Betty Mathis Sproule (PhD CIS 1972) in memory of Prof. Mathis.

Robert H. and Joe-Ann Schmah Engineering Scholarship Fund (666380) Established in 2007 with a gift from Robert H. & his wife, Joe-Ann Schmah, to support educational diversity at the University.

Everett L. Shaffstall Engineering Scholarship Fund (606494) Established in 1976 by Everett L. Shaffstall (BSEE, 1963).

Thomas L. Thomas Engineering Scholarship Fund (667191) Provide four need-based scholarships to academically superior entering freshman students in the College of Engineering.

EE/ECE Alumni Society Graduate Fellowships for Ohio State Graduates (312549) To provide merit based graduate fellowship support for graduates of Ohio State majoring in degree programs in electrical and computer engineering at Ohio State.

EE/ECE Alumni Society Undergraduate Scholarships Non-Residents (312548) To provide merit based scholarships for non-residents enrolled or pre-enrolled in the undergraduate major in electrical and computer engineering.

EE/ECE Alumni Society Undergraduate Scholarships Ohio Residents (312547) To provide merit based scholarships for Ohio residents enrolled or pre-enrolled in the undergraduate major in electrical and computer engineering.

ECE Family Scholarship Fund (482017) To support undergraduate scholarships for electrical and computer engineering students.



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Did You Benefit from an ECE Scholarship?



Tejas Kataria

I received the Shaffstall scholarship for the last two years. Besides my parents support, scholarships were the only other source of funding I had. I was not eligible for federal work study being an out-of-state student. Receiving a department scholarship was a huge motivation to keep moving forward. I was able to invest time in studying and other extra-curricular activities rather than working long hours.

My college experience has been dynamic. I have met some very talented students in ECE. I have been able to try out different areas in ECE and have discovered my strengths and weaknesses. I have a better idea of where I should go next.



Patrick Wensing

College has taught me a lot about myself in terms of my passions, my strengths, and ultimately what I want to do for the rest of my life. I now have long term goals and feel equipped to achieve them.

While scholarships did not directly influence my enrollment at Ohio State, their support allowed me to spend time on undergraduate research and other extra-curricular activities, such as being in the marching band and volunteering for Southside Settlement, instead of working a part-time job. These experiences helped me to grow more than from any time spent in the classroom.

Thanks to numerous alumni and friends of the ECE department, a very large number of our undergraduate students have benefited from receiving scholarships from endowed funds donated to the department, often in addition to scholarships awarded at the university or college-level.

Over the years, Bockstiegel, Byrne-Okey, Caldwell, Chope, Gee, Hendrix, Hoelle, Kan, Lamme, Mathis and Shaffstall scholarships have been awarded annually to 160-200 ECE (formerly EE) undergraduates at Ohio State. As noted recently in the national news, many university endowments suffered considerable losses in the past year or so, including those used for ECE scholarships. And, for the next several years our spending allocations for ECE endowed scholarships will be significantly reduced until the earnings can be recovered through investments or new donations.

If you received scholarships, you know how much these awards help our students. There are some opportunities for our alums to “pay forward,” as Woody Hayes used to say. For example, if you received one of the above named ECE scholarships, you can make a donation to augment the principal for that account to further its legacy, or you could establish your own named-scholarship.

Another method is to donate to one of the three new EE/ECE Alumni Society scholarship accounts established through the OSU Development office. Specifics of these and other endowed (or on their way to becoming endowed) scholarship funds can be found on page 11.