MAINE ELECTRICAL & COMPUTER ENGINEERING

Newsletter, April 2007

ECE Department and the University Loses a Great Teacher and Mentor

On Saturday, March 10, 2007, we lost a gifted and dedicated teacher. Al Whitney was born July 21, 1940, in South Bridgton, the son of Raymond and Alice Whitney. He graduated from the University of Maine with a BSEE in 1962 and a MSEE in 1964 and joined the faculty. During this time, he was active in the Church of Universal Fellowship, serving as president of the men's club and co-superintendent of the Sunday school. Al moved to Rockport in 1971 to work at Tibbetts Industries, Inc., where he worked for 15 years, 12 as CEO. During his time in Rockport, he was active in the community serving on the board of directors for Northeast Health and as chairman for Camden Community Healthcare. He was an active mason of the Scottish and York rites. He was a partner in the group that bought and ran Goose River Golf Course for 12 years; often making the trek from Veazie to Rockport in time to mow the greens before the dew was off in the morning. He returned to the University of Maine in 1986, as a lecturer of electrical engineering. He was the master of ceremonies for the student awards banquet for many years and was known for his dry, quick wit, sharp mind and exceptional devotion to teaching. He was a member of the Region 1 Membership Committee for IEEE and received the IEEE Centennial Award for Outstanding Service to IEEE. Al received several prestigious UMaine awards, including the College of Engineering's 2001 Dean's Excellence Award and 2005 Ashley Campbell Award for outstanding teaching, scholarship and service to the profession.

Al retired from teaching in 2006 and although his retirement didn't go exactly as planned, he considered himself one of the luckiest people in the world, having enjoyed a loving family of whom he was very proud, the support and respect of numerous faculty and students in the University of Maine electrical and computer engineering department, the dedication of co-workers at Tibbetts Industries, Inc., the camaraderie of his partners at Goose River Golf Course and the support of a multitude of friends.

Al dedicated his life to the University of Maine and its students. He shaped the lives of generations of students making them better engineers in preparing them for the challenges they would face in the workplace.

While we are saddened by his passing and will greatly miss him, we cherish and will forever remember his contributions to excellence in teaching and education. We enjoyed the privilege of knowing Al and benefited from his warm and friendly personality.

Donations in Al's memory may be made to the Allison I. Whitney Electrical Engineering Fund (http://www.umainefoundation.org/news/news13.html) care of the University of Maine, 2 Alumni Place, Orono, ME 04469.

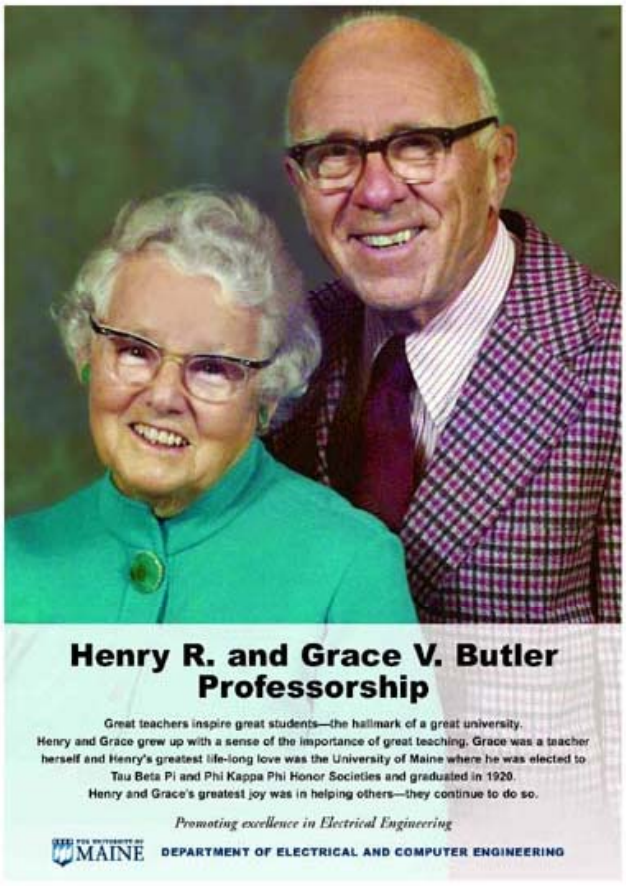
ECE Faculty Member Receives Butler Professorship

Associate Professor Bruce Segee (’85, ’89) has been awarded the Henry R. and Grace V. Butler Professorship in Electrical and Computer Engineering. Bruce received his Ph.D in engineering from the University of New Hampshire in 1992. His research is focused in the area of instrumentation, industrial automation, and computer control of machinery. He has considerable experience with teaching and research in the areas of artificial neural networks, fuzzy logic, instrumentation, networking, and factory automation.

Dr. Segee is the co-author of a graduate level textbook on microprogramming and computer architecture. He teaches undergraduate and graduate courses in Microprogramming, Computer Architecture, Hardware Applications of C, and Industrial Computer Control. He is also the Co-Op coordinator for the ECE Department.

Bruce is a member of IEEE, ASEE, Tau Beta Pi, Eta Kappa Nu and Sigma Xi. In 1994 he received the University of Maine College of Engineering Outstanding Young Faculty Teaching Award. In 1995 he received the University of Maine College of Engineering Outstanding Young Faculty Research Award.

Henry R. and Grace V. Butler Professorship – Great Teachers Inspire Great Students



Henry R. Butler (Nov. 8, 1898-April 19, 1995) graduated from the University of Maine in 1920 with a BSEE. He helped earn his way by working as a school electrician. Upon graduating, he went to work for General Electric in Schenectady, NY, where he met his wife, Grace, who was a resident of Burnt Hills, NY. He was awarded eight patents for his creative work in the early development of radio and participated in the design of some of the first radio transmission stations. In 1929 he went to work for Wired Radio in Ampere, NJ, as Chief Engineer. In 1940 he joined ITT in Nutley, NJ, as Chief Engineer of Communication Products. He remained with ITT until he retired in 1963 when he was Associate Director of the Avionics Division.

Shortly after his retirement, he moved to Orono with Grace, his wife of 65 years when she passed away in 1988. He was very active in both University and Senior Alumni affairs as well as various church and other community affairs. In recognition for his contributions to the University, he received the block "M" Alumni Service Emblem Award. He was active in Boy Scouts for over 70 years and was Treasurer of the Orono Methodist Church for many years. He was also responsible for getting his friend Ray Boynton to design the bridge, which connects the elder citizen housing with the senior center in Orono.

In collaboration with his three children, all UMaine graduates, he established the Henry R. and Grace V. Butler Professorship in Electrical Engineering in 1991. He did this because of his deep love for the University and his desire to help the Electrical Engineering Department maintain its standards of excellence and commitment to help and challenge future electrical and computer engineers. He even purchased a computer and became computer literate in his 80s, a feat that delighted but did not surprise his children. He had an insatiable curiosity and desire to live life to its fullest.

Engineering Week Expo

The 2007 Maine Engineering Week Expo was held at the University of Southern Maine in Gorham. The event was well received by students and companies and attended by over 1200 people. The ECE Department also participated and had a booth displaying information about undergraduate and graduate programs and had a demonstration of several electrical and computer engineering devices and small robots.

Alumni Profile – Albert R. Barmby

In response to our February 2007 newsletter, Al Barmby BSEE ’48 wrote:

> “That was a great newsletter. So often people do great work but writings for the public falls far short of their contributions! ….. We have marched so far from the 01A tubes! I imagine the present generation may not even know of what I speak!”

I curiously asked Al, “What are 0lA tubes.” Here is his response:

> “Ah Ha! Gotcha! About the 0lA. Back in 1920 tubes were made by RCA or Sylvania or later Raytheon. The 0lA was a four pin large glassed triode. It was replaced by the “99” or smaller version. Then came the pentodes with five pins! I think I shipped some for your history collection. Peek in. I have shared my first portable radio story with you.”

1935 Battery-Powered Portable Radio – Al Barmby

In 1935, I was the neighborhood kid in North Reading, Massachusetts. I mowed people’s lawns and delivered their morning papers. I helped folks carry out their stove ashes and waste papers. I knew everyone around the town center and they all knew me.

As a result, when some senior folk friends of mine got a new superhetrodyne (design type) radio they asked me if I would like their old TRF type. It had four tubes and used either earphones or a cone speaker. I was all of 11 years old and was deep into the radio field by then having built

my own radios. I took it figuring I could build me a portable battery radio from that old radio set.

I was also into telephony. I had a senior friend who only lived a mile away who was developing the teletype for Western Union at that time. In the Army, that was the field I got into along with telephone repeaters and long line amplifiers. The telephone amplifiers and the radio amplifiers were very similar.

Along the way I became good friends with the local telephone operator and her husband (the fire chief). They had the telephone switchboard in their front room. When I took the daily mail up to the Post Office, I could go a couple more houses up the street and visit with the switchboard operator and the local telephone technician. I found the telephone system very fascinating, and it also had used batteries, which I needed.

When I was given that radio I had found just what it needed for it's A, B and C batteries. And I had just the "Red" wagon to put it all into. You see the radio only needed about 90 volts for the "B" battery. That was sixty volt and a half dry cells and four parallel connected batteries for the filaments (A) battery. The "C" battery was just one cell for bias. Three boxes of good batteries provided all I needed, 72 cells. Back then everyone had a bag of three, of these one and a half volt dry cells hanging in a bag in their cellar for their telephone's local system. When the technician came through town annually changing batteries he left the boxes filled with the old batteries on the front porch of my telephone operator. I used to tell her when I needed a battery or two for my radios. The ninety volts I needed meant sixty batteries or the three full boxes of cells. They weighed in at a "ton" a box of twenty cells. Actually it was about 48 pounds per box, but I had free power cells for my A, B and C batteries needed for my radio.

For my aerial I made a couple of four foot tall birch posts with foot wide tee arms and then threaded some salvaged 20 gage copper wire back and forth. I wedged the battery boxes into my wagon to hold the posts upright. The three battery boxes properly connected delivered all the power I needed. The birch tree antenna delivered the needed signal and the donated radio sat on top of all of this, tied down of course. I anchored the cone speaker to the front birch pole with it sitting on top of the batteries also, but in front of the radio. Then I was off and "running" with about 130 pounds worth of batteries!

I could tune in many local stations and the speaker sound was quite loud…for those days. I could even pull that wagon weighing about 150 pounds loaded behind me. And so I delivered my daily papers which were sitting on top of the whole assembly.

It all worked fine. The senior folks who gave me the radio just gaped when I first came up their drive to deliver their paper with their old radio playing. Thanks to our local telephone company I had lots of battery power as I took all the good tested used batteries the technician could leave me. I found most batteries were up to voltage. As a result he had very few bad batteries to return but he got my used ones back again. It was early recycling and I had my first battery powered portable radio.

Albert R. Barmby graduated from Reading High School in Massachusetts in 1941. He attended the University of Maine from 1941-1943. During this time he was active in the reserves. He was called into the army and did his basic training at Ft. McClellan in Alabama. Mr. Barmby had a choice of radio or telephone school and decided on telephone. He completed the 12 week course at Ft. Monmouth in about four weeks and was made the 3188th Signal Service Battalion. He was made a repeaterman in the long lines company. He got into the teletype branch work for a time and found it interesting and worked for the Reichstagpost in Germany in their relay office. In 1944, he was stationed in Blackburn, England and after the war made friends with some folks there, and to this day, still corresponds with them. In 1945, Al got shuffled around, and in May went to the Italian-French Alps for a couple of months. There he laid carrier cable from Modane, in the southeast of France, over the pass to Susa and up a one-lane dirt road to the mountain top to Bardonnecia, Italy. He spent eight months in Germany before returning home in April 1946.

Al came back to the University of Maine in the Fall of 1946 and graduated in February 1948. He worked for Public Service of New Jersey as an engineer in training and then went to work for Motorola developing their color TV which he found very interesting. From there he went to work for Sperry Corporation for 32 years moving up the ranks from assistant product engineer. When he went to Huntsville on the NASA program he moved from engineering section head to department head and later mission manager.

On the side he was in Boy Scouts for 50 years and had his own troop for ten years in Long Island working with chaps on merit badges, mostly of the electrical type. He worked with REACT with the state police on traffic safety and was Vice President of HATS (Huntsville Association of Technical Societies).

> *Editor's Note: We hope you have enjoyed reading the article from Mr. Barmby. We would like to continue this in future newsletters, therefore, we are hoping to hear from other alumni. If you have a story you would like to share with us, we would love to hear from you. Please contact me at musavi@eece.maine.edu or susan@eece.maine.edu or call 207-581-2243.*

Grants Received

A. Abedi, "NASA Aerospace Workforce Development Program," to send student intern to NASA-JSC during Summer 2007, $5,750, January 31.

A. Abedi, “Lunar Radiation Generator,” Maine Space Grant Consortium, Undergraduate Summer Research Fellowship, $2,500, February 26.

J. Vetelino (80%) and C. Holden (20%) “Track II GK 12: Sensors!” Yr. 2, NSF, $411,472, March 14.

Publications

Peer Reviewed Journal

H. Ressom, S.K. Fyfe, S. Srirangam, P. Natarajan, and **M.T. Musavi**, “ Neural Network-Based Estimation of Photosynthetic Efficiency,” International Journal of Ocean and Oceanography, Volume 1, No. 3, September 2006.

S. Manandhar, S.E. Turner and **D.E. Kotecki**, “36-GHz, 16X6-Bit ROM in InP DHBT Technology Suitable for DDS Application,” IEEE, Journal Solid State Circuits, Vol. 42, pp. 451-456, February issue.

A. Abedi, A.. Khandani, “invariance Properties of Binary Linear Codes Over a Memoryless Channel With Discrete Input,” IEEE Transactions on Information Theory, Volume 53, Issue 3, pp. 1215-1218, March 2007.

Other

Since February the faculty have submitted nine proposals for a total of about $1,476,000.