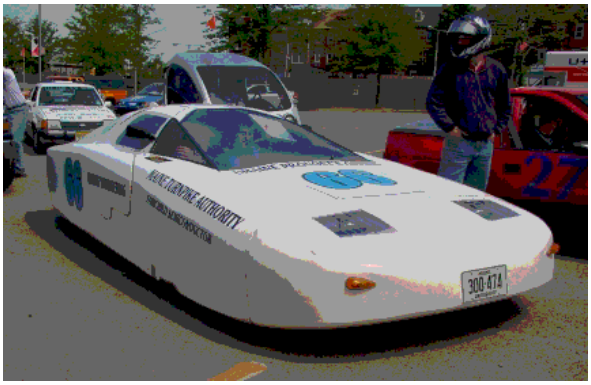
December 2001

ECE Department Announces On-line Masters Degree

Beginning this year, ECE students will be able to obtain an on-line Masters degree in Electrical Engineering or Computer Engineering. We will begin with a pilot course this spring (ECE512 "Linear Systems"), we will further test during the summer with ECE577 "Fuzzy Logic" and possibly ECE667 "Solid State Devices Theory II", and we'll begin full-fledged operation this fall. The goal is to have nearly all our graduate classes on-line by the end of next year. There are a few lab-oriented courses that will present some challenges (ECE547 "VLSI Design/Layout", ECE548 VLSI Test/Characterization, and ECE663, "Design and Fabrication of Surface Wave Devices"). Here is a tentative schedule of offerings.

A substantial change in these courses, vis-avis what we've done in the past with distance ed courses, is that we'll assume the minimum internet connection bandwidth available to the student is a **full 56 kbps**, implying the student should be served, in all likelyhood by at least cable modem or DSL. The content will be completely asynchronous ("non-live") but will conform with the normal semester schedule in other respects. To register, go to the Continuing Education registration page and search on the keyword, ECE512..

Solar Vehicle Team



The UMaine Solar Vehicle team has had phenomenal success over the last few years and is looking for new members. ECE student Josh Schoolcraft, one of the team leaders, says the competition is just starting up, and they're looking for engineering students at every level in every department to become involved. They would also like to invite new sponsors willing to help in any way. These folks are building cars that are ***more efficient*** than cars built by the major auto manufacturers. Here is more information ...

ECE101 Crowns 2001 Champs!

Kevin Ridley, Jesse Ouellette, and Allen McCausland with Mr. Plow. The strategy for Mr Plow was to efficiently capture balls and wire nuts, then lure the opponent to its side of the table and pin it down. It worked!

The winner of the 2001 ECE101 Challenge is Mr. Plow! First-year students in ECE101 are assigned the project of building a remote controlled vehicle to provide a connection between course topics and provide motivation for study. They are given the mechanical part of the vehicle and are expected to construct the electronic controls. Students work in teams to accomplish this goal.

The topics lead naturally, one to the next, in the following order: resistive circuits, RC circuits, 555 timers, combinational logic, Karnaugh maps, sequential logic, DC motors, PWM control, and how all of these fit together to make the vehicle work. They learn the hands-on skills of soldering, wire wrapping, reading schematics, using basic lab equipment, and trouble shooting. Finally, they gain an appreciation for the importance of a modular approach to design and test. The vehicle construction culminates in a head-to-head competition (different each year) that requires students to modify the vehicle to perform some function.

Al Whitney wins "Dean's Award of Excellence"

When we speak to alumni/ae from the ECE department, there is a faculty member who is consistently mentioned as being the one person who most influenced their education and to whom they are most grateful. That person is Al Whitney. When students think of Al, they think of a professor who is tough, who has high standards, but above all, is willing and interested in spending time with them - spending time discussing homework, school problems, schedules, careers, and their personal lives. In terms of advising, Al is the ultimate role model for all our faculty, and he best represents what the University of Maine would like to symbolize for all students - a caring, fair, and knowledgeable teacher who does everything possible to ensure students' success as they move on in their personal and professional lives. It is fitting that the Dean's Award of Excellence for 2001 go to a

person who best represents the institution's devotion to students and their academic integrity. That person is Al Whitney.

Beginning this year, this $1000 cash award will be presented annually at the December Francis Crowe Society induction ceremony to a member of the ECE Department who has contributed substantially toward improving the quality of the Department and achieving its mission.

Tidbits ...

Computer Engineering Curriculum Update - It has been decided to maintain COS250 Discrete Structures as a required course in the CEN curriculum. However, the course will undergo some re-design as a result of our discussions with Computer Science.

High school students need to be aware that the application process for Microelectronics and other Department scholarships will **begin early next semester**. The Microelectronics Scholarship application schedule for current high school students and the ECE Scholarship page give more details. More information will be forthcoming in the January newsletter as well.

NSF REU and MERITS - In the past, we have sponsored many scholars from these programs. We **encourage high school students/teachers and current undergrads** to apply by January 15th to MERITS, and we encourage Maine undergrads to apply to the NSF REU program by April 1st.

And finally ...

A festive holiday poem by Hugh Drumm and Vincent Ambrose ...

'Twas the night before Christmas, when all through the Net,
There were hacker's a surfing. Nerds? Yeah, you bet.
The e-mails were stacked by the modem with care,
In hopes that St. Nicholas soon would be there.
The newbies were nestled all snug by their screens,
While visions of Java danced in their dreams.

My wife on the sofa and me with a snack,
We just settled down at my rig (it's a Mac).

When out in the Web there arose such a clatter,
I jumped to the site to see what was the matter.
To a new page my Mac flew like a flash,
Then made a slight gurgle. It started to crash!!
I gasped at the thought and started to grouse,
Then turned my head sideways and clicked on my mouse.
When what to my wondering eyes should appear,
My Mac jumped to a page that wasn't quite clear.
When the image resolved, so bright and so quick,
I knew in a moment it must be St. Nick!

More rapid than mainframes, more graphics they came,
Then Nick glanced toward my screen, my Mac called them by name;
"Now Compaq! Now Acer!", my speaker did reel;
"On Apple! On Gateway!" Santa started to squeal!
"Jump onto the circuits! And into the chip!
Now speed it up! Speed it up! Make this thing hip!"
The screen gave a flicker, he was into my RAM,
Then into my room rose a full hologram!
He was dressed in all red, from his head to his shoes,
Which were black (the white socks he really should lose).
He pulled out some discs he had stored in his backpack.
Santa looked like a dude who was rarin' to hack!
His eyes, how they twinkled! His glasses, how techno!
This ain't the same Santa that I used to know!

With a wink of his eye and a nod of his head,
Santa soon let me know I had nothing to dread.
He spoke not a word, gave my Mac a quick poke,
And accessed my C drive with only a stroke.
He defragged my hard drive, and added a DIMM,
Then threw in some cool games, just on a whim!
He worked without noise, his fingers they flew!
He distorted some pictures with Kai's Power Goo!
He updated Office, Excel and Quicken,
Then added a screensaver with a red clucking chicken!
My eyes widened a bit, my mouth stood agape,
As he added the latest version of Netscape.

The drive gave a whirl, as if it were pleased,
St. Nick coyly smiled, the computer appeased.
Then placing his finger on the bridge of his nose,
Santa turned into nothing but ones and zeros!
He flew back into my screen and through my uplink,
Back into the net with barely a blink.
But I heard his sweet voice as he flew from my sight,
"Happy surfing to all, and to all a good byte!"

Publications, proposals, etc.

GRANTS RECEIVED

- H. Ressom, "Development of Neural Network-Based Models for Chlorophyll-a Estimation in the Gulf of Maine," Maine Space Grant Consortium/NASA, $38,416 (for one year), November 1.

PROFESSIONAL ACTIVITY

- M. DaCunha was elected to serve on an administrative committee of the IEEE UFFC, October 30.
- D. Kotecki attended New England High Performance Computing Meeting at Mitre Corporation, Bedford, MA, November 1-2.
- C. Domnisoru and H. Ressom attended the COBRE (Centers of Biomedical Research Excellence) meeting in Augusta, November 12.
- D.E. Kotecki reviewed a paper for the Journal of Vacuum Science and Technology A, Nov. 30.
- H. Ressom reviewed a paper for the IEEE Transaction on Neural Networks, December 12.
- H. Ressom reviewed a paper for the IEEE Transaction on Semiconductor Manufacturing, December 12.
- J. Patton attended an MMSTEC Cross Tier Teaching Team Meeting, December 10
- J. Vetelino served on the NSF-REU review panel on December 3-4 in Arlington VA.

PUBLICATIONS

M. DaCunha and S.D. Fagundes, " Metal Strip Reflectivity and NSPUDT Orientations in Langanite, Langasite, and Gallium Phosphate," accepted for publication in the Transactions on Ultrasonics, Ferroelectrics, and Frequency Control as a paper, November 30.

PRESENTATIONS

- J.L. Cousins and D.E. Kotecki, "Simulation of the Variability in Microelectronic Capacitors with Polycrystalline Dielectrics," Materials Research Society Meeting, Boston, MA, November 27.
- J. Vetelino and L. French, "Metallic Glass Project," at BAE Systems, Nashua, NH, November 15.
- J. Patton and Katherine Comeau, NSF undergraduate MMSTEC scholar, "RoboLab Girls Club" Maine Math Science Teaching Excellence Collaborative MMSTEC Cross Tier Teaching Team Meeting, November 13

PATENTS

G. Costrini, D.E. Kotecki, P. Andricacos, and K.L. Saenger, U.S. Patent #6,323,127, "Capacitor Formed With Pt Electrodes Having a 3D Cup-Like Shape With Roughened Inner and Outer Surfaces," November 27, 2001.