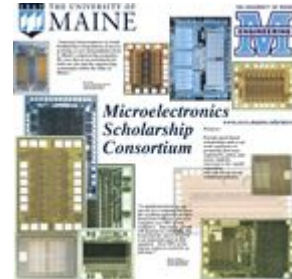


April/May 2001 (Note: This is the last newsletter til September - Have a good summer!)

ECE and MSC Awards Announced

We distributed over \$100,000 in ECE and [Microelectronics Scholarship Consortium](#) awards at the IEEE Spring Banquet. Join us in congratulating the recipients below!!



Click to enlarge or [Download msc.pdf](#).
(Warning ~9Mb)

Scholarship or Award Title	Recipients
Fairchild Semiconductor	Tarun Rathnam
	Adam J. McKay, CHE
	Crystal Carr, EPS
	Roxie Paine
Fairchild Semiconductor First Year Scholarship	Greg Sinnett, EPS
	Dan Bowe, Sebago Lake
	Jonathan Dunn, Berwick
	Scott McGregor, South Berwick
National Semiconductor First Year Scholarship	Brian Brunette, Augusta
	James LePage, Old Town
	Christopher Laplante, Waterville
	Matthew Foster, Dexter
National Semiconductor	Suzanne George, Merrimack, NH
	Matthew Rodrigue
Analog Devices	Susannah E Quintal, CHE
	Trent J. Krummel
Tundra Semiconductor	Scott R Higgins, CHE
	Ryan Bethel
	Jeremy A. Thiele
Texas Instruments	Jason R. Cookson
	Alma Delic-Ibukic
	Janelle Tonti
	Joshua Griffin

Texas Instruments First Year	Mark R. Bell, Wiscasset
The Edmund M. Sheppard Scholarship	?Joshua Cincotta
	?John Roberts
The David Dunlap Holmes Scholarship	?Ralph Cox
The Carlton M. Brown Scholarship	?Hilary Flinkstrom
The Walter W. Turner Scholarship	?Erik McCarthy
The Waldo M. Libbey Scholarship	?Pat Spinney
The Fred Irons Scholarship	?Michael Chasse
Morrison/Beverage	?Craig Burbank
ECE First Year Scholarship	Ben Martin, Presque Isle
	Ian A. Hunt, Corinna
	Justin Dean, Brownville Junction
	Jared S. Labonte, Bangor
	?Bennett Meulendyk, Farmingdale
	?Ryan Curran, Bangor
	?Timothy Monk, Pittsfield
The Harold H. Beverage Award	?Tim Johnston
The Walter Joseph Creamer Award to outstanding students across the Department	Sara McCabe
	Hilary Flinkstrom
	Roxie Paine
	Matthew Rodrigue
	John Roberts
	Abbas Hameer
	Ryan Bethel
Francis J. Hovey Award - Outstanding Senior	Brandon Atkinson

A "Most Marketable" Senior Project

On May 12, graduating seniors [Rachel Morehouse](#) and [Eric Soucie](#) traveled to the [RIT Student Design Contest](#) where they won the "Most Marketable" award for their Virtual Cane project

The Virtual Cane is a portable electronic device that indicates to the user the presence of a surface eight feet from the cane. The device accomplishes this by transmitting an ultrasonic wave toward a surface. The



Virtual Cane then receives the reflected wave and determines if the surface's distance is less than eight feet from the cane. The object's distance is indicated to the user by vibrating the cane. The cane vibrates less when the surface is far away from the Virtual Cane and vibrates stronger when the surface is closer.



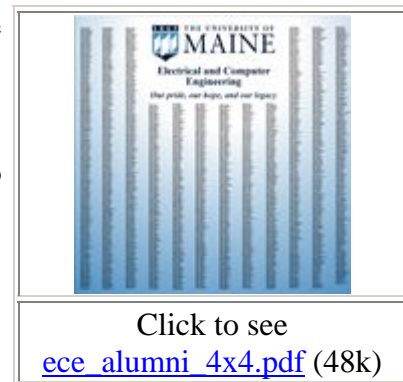
If you are interested in helping Eric and Rachel investigate the true marketing possibilities for this device, feel free to contact them.

([Eric](#) or [Rachel](#))

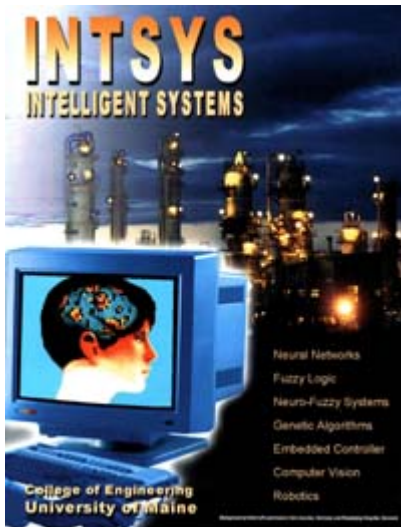
Our pride, our hope, and our legacy ...

Recently, we created a poster in honor of all our alumni/ae since 1895. It is truly inspiring to stand in front of these names and remember all those who have passed our way.

You can print the full pdf image (4' x 4') or just zoom in to check your listing. You'll need Adobe's free [Acrobat Reader](#). If you see any errors, please let me know. Thanks. (musavi@ece.maine.edu).



Strategic Directions - Bioinformatics and Oceanography in the Intelligent Systems Lab



Recent funding in the area of DNA sequencing and chlorophyll estimation has enabled the [Intelligent Systems Lab](#) to expand its research work in bioinformatics and oceanography, including the investigation and application of novel signal processing techniques in DNA base calling and gene expression data analysis. Applications in oceanography consist of primary production and chlorophyll estimation in both open and coastal waters, which would provide important clues in research preventing hypoxic zones. INTSYS is also developing AXON: integrated neuro-fuzzy software for use by the industrial and research community.

Where are ECE students working this summer?

The following students are receiving academic credit for their co-op or [NSF Research Experience for Undergraduates program](#) this summer. When they return to classes in the fall, they will prepare written and oral reports on their experience. We will be discussing a planned IEEE Co-op job fair in October. Stay tuned.



Binaya Acharya	General Electric
Ryan Bethel	Tundra Semiconductor
Prashanth Chandrasekar	National Semiconductor
Jason Cookson	Tundra Semiconductor
Ben Davis	General Electric
Mohamed Driss	Analog Devices
Abbas Hameer	Tundra Semiconductor
Mike Lewark	Georgia Pacific
Mike Litcher	Anthem Blue Cross
Curtis Mullen	Madison Paper
Tarun Rathnam	Fairchild Semiconductor

Kamal Shannak	Fairchild Semiconductor
Janelle Tonti	Texas Instruments
Lisa Wellman	National Semiconductor
Nick Pike	NSF - REU
Tom Pollard	NSF - REU
Rachael Soucie	NSF - REU

Introduction to Electrical Circuits and Signals, Vol. 2

[Fred Irons](#) wants you to know that Volume 2 of his Circuits series has been printed and copies are now available. Both volumes are the same price plus shipping. (\$32.50+\$4.50). Details are given at the [website](#):

And finally ...

We are reminded by our industrial constituents that one of our highest priority objectives should be to graduate engineers who can communicate well. Here is what happened when some engineers were charged with making the English language more efficient ...

The European Commission has just announced an agreement whereby English will be the official language of the EU rather than German, which was the other possibility. As part of the negotiations, Her Majesty's Government conceded that English spelling had some room for improvement and has accepted a 5 year phase-in plan that would be known as "Euro-English".

In the first year, "s" will replace the soft "c". Certainly, this will make the sivil servants jump with joy. The hard "c" will be dropped in favour of the "k". This should klear up konfusion and keyboards kan have 1 less letter.

There will be growing publik enthusiasm in the sekond year, when the troublesome "ph" will be replaced with "f". This will make words like "fotograf" 20% shorter.

In the 3rd year, publik akseptanse of the new spelling kan be ekspekted to reach the stage where more komplikated changes are possible. Governments will enkorage the removal of double letters, which have always ben a deterrent to akurate speling. Also, al wil agre that the horrible mes of the silent "e"s in the language is disgraseful, and they should go away. By the fourth year, peopl wil be reseptiv to steps such as replasing "th" with "z" and "w" with "v". During ze fifz year, ze unesesary "o" kan be dropd from vords kontaining "ou" and similar changes vud of kors be aplid to ozer kombinations of leters.

After zis fifz yer, ve vil hav a reli sensibl riten styl. Zer vil be no mor trubl or difikultis and evrivun vil find it ezi to understand ech ozer. Ze drem vil finali kum tru!

Publications, proposals, etc.

UNIVERSITY/COLLEGE/DEPT SERVICE

- R. Eason and A. Sheaff gave lab tours to two groups of middle school students, April 10
- R. Eason and A. Sheaff gave 3 lab tours for high school students during open house, April 16
- R. Eason and A. Sheaff gave lab tour to about 15 high school students (arranged through the Wabanaki Center), April 16
- D.E. Kotecki attended the Graduate Board meeting, April 19
- J. Patton attended Executive Committee Meeting, April 25.

GRANTS RECEIVED

H. Resson, "Neural Network Modeling of Chlorophyll-a Concentration From Remote Sensing Data," NASA Stennis Space Center, \$22,000, May 2001.

B. Segee, (20%), V. Caccese (40%), S. Vel (20%), R Lopez-Anido (10%), M Peterson (10%), "Modular Advanced Composite Hull-form (MACH) Technology", US DEPT DEFENSE/Navy, \$2,247,634

PROPOSALS SUBMITTED

- J. Patton (12.5%), R. Eason (25%), L. Latour (25%), A. Garthwait (25%), T. Bickford (12.5%), "The Robotics in Informal Science Education (RISE) Program," NSF, \$1,680,618, March 5. (pre-proposal, full proposal currently being prepared)
- M. Musavi (40%), S. Tavantzis (10%), H. Resson (25%) and C. Domisoru (25%), "Accurate Genomic Tools," USDA, \$781,395, April 19.
- M. DaCunha, "High Temperature Oscillator and Digital Clock," SBIR/Linear Measurements, Inc., \$54,160, April 27.
- M. Musavi, "DNA Base Calling," Burroughs Wellcome Fund (Career Awards at the Scientific Interface), \$538,000, May 1.

PATENTS

"Crown Capacitor Using a Tapered Etch of a Damascene Lower Electrode," U.S. Patent #6,222,219, J.P. Gambino and D.E. Kotecki, April 24, 2001

PUBLICATIONS

"Novel Electrode Configurations of Bulk Acoustic Wave Resonators for Liquid Sensing Applications," J.F. Vetelino, C. Zhang, R.B. Haskell, T. Grillo, J. Seitz and G. Grillo, Proceedings of the 2000 IEEE Ultrasonics Symposium, pp. 421-426, October 2000.

"The Bleustein-Gulyaev Wave Mode in Potassium Niobate for Liquid Sensing Applications," C. Zhang, J.J. Caron and J.F. Vetelino, Proceedings of the 2000 IEEE Ultrasonics Symposium, pp. 263-268, October 2000.

"Pure Shear Horizontal SAW On Langatate," M. Pereira da Cunha and D. C. Malocha, IEEE 2000 International Ultrasonics Symposium Proceedings, pp. 231-234, October 22-25, San Juan, Puerto Rico, 2000.

"HVPSAW Sensitivity to Film Properties for ZnO/DIAMOND/Si Structures," M. Pereira da Cunha, E. Adler, and D. C. Malocha, IEEE 2000 International Ultrasonics Symposium Proceedings, pp. 283-286, October 22-25, San Juan, Puerto Rico, 2000.

"Experimental and Predicted Saw Temperature Behavior of Langatate," M. Pereira da Cunha and D. C. Malocha, IEEE 2000 International Ultrasonics Symposium Proceedings, pp. 245-248, October 22-25, San Juan, Puerto Rico, 2000.

"High-Temperature Ultrasonic Devices for Harsh Environments," H. J. Whitehouse and M. Pereira da Cunha, IEEE 2000 International Ultrasonics Symposium Proceedings, pp. 200-205, October 22-25, San Juan, Puerto Rico, 2000.

"Recent Measurements of Material Constants versus Temperature for Langatate, Langanite and Langasite," D.C. Malocha, M.P. da Cunha, E. Adler, R.C. Smythe, S. Fredrick, M. Chou, R. Helmbold and Y.S. Zhou, IEEE 2000 Frequency Control Symp. Proceedings, pp. 200-205, June 7-9, Kansas City, Missouri, USA, 2000.

"Effects of Layer Thickness for SAW, PSAW, and HVPSAW Devices," M. Pereira da Cunha, IEEE Trans. Ultrason. Ferroelec. Freq. Contr., Vol. 48, No. 1, January 2001, pp. 93-99.

PROFESSIONAL ACTIVITY

J. Vetelino visited RITEC (Rhode Island Technical Electronics Corp.) to discuss research on metallic glasses, Warwick, RI, April 12-14.

PRESENTATIONS

D. Kotecki, "Development of Electronic Based Presentations in an Engineering Curriculum," at the First Annual Teaching and Technology Forum, Academic Computing Advisory Committee & The Center for Teaching Excellence, Soderberg Center, April 30.

M. Amos, "Enhancing the Functionality of Database Management Systems by Integrating Artificial Neural Network Processing and World Wide Web-based Information Distribution," Graduate Student Expo, Wells Conference Center, April 12.

J. Cousins, "Simulation of the Variability in Retention Time for Next Generation Microelectronic Capacitors," Graduate Student Expo, Wells Conference Center, April 12.

L. French, "Design and Development of Metal Glass Delay Lines," Graduate Student Expo, Wells Conference Center, April 12.

R. Reynolds, "Fuzzy Gene Expression Analysis," Graduate Student Expo, Wells Conference Center, April 12.

M Rioux, "Parallel Computing: Achieving Supercomputer Performance From Commodity Components," Graduate Student Expo, Wells Conference Center, April 12.