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Student Debate:**Locker Policy Takes Hold**

A new policy taking effect Winter quarter turned over administration of the student lockers in the Electrical Engineering building to Eta Kappa Nu (HKN), the E.E. honor society. Along with this came some changes in the management of the lockers. The following explanation should hopefully both clear up any questions and satisfy those students unhappy with the situation.

Formerly, the lockers (located on the third floor of the E.E. building) have been managed by the Department. No rental fee was charged to the students for locker usage. However, according to Thomas Seliga, chairman of the department, serious problems existed with this situation. First of all, management of the lockers required extensive time of the staff, and therefore was very expensive. Also, lockers were being occupied by other than current E.E. students, and the Department had no means to regulate this.

Given these conditions, Seliga reasoned that the lockers should be regulated by one of the student groups in the department (IEEE or HKN), and that some method of rent (max \$5 per quarter) be instated to upgrade and maintain the condition of the lockers. Any remaining income following repairs, etc. is to be used for activities benefitting the entire student body, with student usage, receipts, and expenditures being strictly accounted for to insure this.

On a parallel note, both IEEE and HKN have requested from the de-

partment financial support of its student activities. However, the Department is not budgeted by the University for such expenses. Recent budget cuts have slashed support of these two student groups, and means for support of their activities needed to be found. IEEE was offered the chance to manage the lockers, but declined. HKN then willingly accepted the responsibility and conditions of the assignment. According to Seliga, "Either student group would have done a good job in leasing the lockers."

When HKN took over the lockers, they inherited the problem of outside students using them. HKN president Will Graylin stated, "The old system was messed up. When we last cleaned out the lockers, we found locks that had been on for years, with moldy clothing in them (the lockers)." The new \$5.00 per quarter fee is HKN's proposal to help clean up and regulate the lockers.

I asked Will Graylin why a \$5.00 deposit wouldn't work - to only charge those who abused their lockers. Graylin replied that the quarterly fee would work better to even out supply and demand. People who put down a deposit could hang on to the lockers even if they no longer need them, keeping others willing to pay \$5.00 on a long waiting list. This way, people who do not need the lockers will hopefully relinquish them. Graylin said, "It

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Ph.D Students Grab Awards

Jack Yao, a Ph.D student, was selected by Tektronix Corp. to receive a Graduate Fellowship for his research work on high-frequency simulation within MISIM, an integrated CAD system developed at the University of Washington. The fellowship, renewable every year, includes a yearly stipend of \$15,000. Jack's advisor is Prof. Andrew Yang.

Julie Chen, a Ph.D student, was selected by IEEE ACM/SIGDA Society to receive a Graduate Fellowship for her research work on statistical yield assessment within MISIM. The fellowship includes a yearly stipend of \$12,000. Julie's advisor is Prof. Andrew Yang.

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PUNK SIGNAL PROCESSING? The world awaits to see...

Imagine this: Mom and Dad are leaving for their Saturday evening date... they tell you and your siblings to be good, go to bed early, and be sure to take the TV dinners out at 7. You fake your best smile as they walk out the door, your stomach tingling slightly out of the hunger you're experiencing, but also out of the excitement of the evening which lies ahead. Saturday night with TV dinners, and what goes best with TV dinners???? TV!! Your child-like mind scheming, you envision "The Love Boat", "Fantasy Island" ... and maybe even "Saturday Night Live"! It won't be an early night, come hell or high water! Your siblings proceed to arrange the food tray-tables in a semicircular array approximately 4 feet away from the television, and you race to take the dinners out of the oven at 7. Careful to peel the tinfoil off everything but the cherry pie dessert, your salivary glands are working overtime as you glance at the furiously bubbling turkey gravy and you bring the gourmet feast to the banquet tray-tables. Making sure your brothers and sisters are fastened to their seats, you do the ultimate honor and travel the extra four feet to pull the nob of your entertainment source for the evening, expecting to be greeted by the "Muppet Show" theme song and ever familiar high pitched buzz of the thing warming up. Instead, there is nothing. Nothing! Nothing!?? The evening is ruined!

At least, this is what most of us would think... but this is not how Les Atlas reacted when he was younger. When his parents left for the evening, his father would take out the tubes from the television set, assuring himself that no television would be seen. Professor Atlas proceeded to find among the multiple musicians who benefitted from his amplified engineering skill, Howie Epstein became the most famous (the bassist for Tom Petty and the Heartbreakers).

Continuing to pursue his interests, Atlas attended the University of Wisconsin at Milwaukee and Osh Kosh for four years and said "by the time I was

21 years old I realized I wanted to quit being a bum and straighten up...". He transferred to the University of Wisconsin at Madison, where he maintained a 4.0 GPA average, and graduated after 2 years of study with a BSEE. His interests in electrical engineering bloomed in the areas of signal processing and the coding of the ear. Upon graduation, he traveled to Stanford University in pursuit of his Masters and Doctoral Degrees.

At Stanford, Atlas developed his thesis on speech coding for prosthesis for deaf people which he described as "put(ing) electrodes in their ear, and mak(ing) them hear. My goal was to make them understand the speech". This type of research is an ongoing thing, he explained.

Currently, Professor Atlas supports nine graduate and six doctorate students. His research explores "quadratic signal processing for speech, sonar and factory sensor applications". Quadratic signal processing? What the heck is that? He explained that the conventional signal processing algorithms center around the Linear Time Invariant assumption, and the by product of this is that the time and frequency resolutions must suffer a kind-of "trade off". "By deviating from the LTI, you can side step this trade off... and quadratic is the easiest deviation to make." Five years ago, many people thought this was not a plausible and practical approach, but now there is definitely a solid group of followers of this new vision of signal processing, Professor Atlas said.

I asked him if he was the originator of this new approach to signal processing, and his reply was, "well, we thought we were", but Atlas described how Leon Kohn in 1966, a physicist, first created formulations of the general versions of Atlas's theories. Other researchers and theorists have brought a significant amount of insight into the theories, including Professor Marks (two dimensional transform theory) and Jim Kaiser of Bell Laboratories.

Atlas and his group of researchers are working on both the theory and applications of this new type of signal processing. Support of the theory research is supplied by the NSF Presidential Investigator Award. Much of the support of the applications of the theory comes from the Office of the Naval Research, Boeing, and U.S. West Advanced Technologies (for applications of speech coding).

In his spare time, he enjoys keeping his 1974 Jensen-Healey (Lotus engine included) running, taking it up to the mountains, ZZ Top blaring through his (most likely) Hi-Fidelity Stereo, and looking for American Cars to race. He also enjoys to bicycling.

So why is he a professor? He loves to work with students. He teaches EE 443 (design and applications of digital signal processing), EE 518 and 519 (graduate level introductory courses in DSP). He says working with students keeps him "from stagnating". Also, he can maintain his trouble making rebellious nature, and still receive a salary. He contends that, "with the right kind of actions, being a rebellious trouble maker in research can be one of the best ways to contribute to society."

When asked his opinion of what the future holds in signal processing, he forecasts that "the axioms of Linear Time Invariant Systems (will be) treated as rules to learn and then break." He thinks that these newer forms of signal processing will improve the performance of systems analyzed, and "stepping away from the notion of LTI Systems will allow people to better model the function of the ear and its coding." He believes that the field really needs rebels, those willing to challenge the system and perform research with a different approach... "radical, punk signal processing", says Professor Atlas, is the way to go...

- by Kathleen Dugan