

UNIVERSITY OF WASHINGTON

EE NEWS

Published by the Department of Electrical Engineering
and the I.E.E.E. Student Branch

Volume II, Number 5
January, 1988

FROM THE EDITOR...

Well, here it is finally--the first issue of the EE News this year! I have one brief announcement to make. For the rest of the school year, instead of one issue per month, there will be two issue per quarter. It was just too difficult getting the last issue printed before finals. Never again!

Also, at deadline the following item came up: Engineering Week is coming up February 22-26. Let's win again this year!

-The Editor

Staff Box

Staff

David Wu
Mike Ishimitsu

Special Writers

Bill Moritz
R. J. Marks II

Editor

Gilman Wong

Faculty Advisor

Bruce Darling

UW IEEE STUDENT CHAPTER TO HOST SEATTLE SECTION PIZZA FEED

The UW IEEE Student Chapter will host the 1988 IEEE Seattle Section Student Pizza Feed on Tuesday, January 26, 1988. The event will be held from 6:30 pm - 9:00 pm in the HUB East Ballroom of the University of Washington Campus. The student chapters represented at the Pizza Feed include Seattle University, Seattle Pacific University, and the University of Washington.

Several presentations will be given while the pizza and drinks are served. Scheduled topics include an overview of the purpose and opportunities in IEEE as well as a summary of the past year's activities by each of the student chapters. The program also includes a series of discussions with various industrial representatives. In addition, the night's activities will culminate with the presentation of this year's recipients of the IEEE awards. This year's special guest is Charles Ittner, a retired engineer with over 50 years of experience applying engineering with minimal impact on the environment.

The price of admission is \$1.00 for students (both members and non-members) and \$5.00 for all others. Tickets may be purchased from IEEE officers prior to the event or at the door.

Gleason's Approximation

by Professor Robert J. Marks II

When I was a lowly graduate student in the great state of Texas, a colleague of mine, Hector Gleason (not his real name) was faced with an impossible task due to the carelessness of a professor. On a take home examination in plasma physics, the professor gave the students the answer to the first problem which turned out to be one gauss. Unfortunately, the professor had miscalculated and the correct answer was two gauss. Poor Gleason worked the problem from three different approaches and in each case came up with an answer of two gauss. After thirty-six hours of frustrating sleeplessness, on the bottom of the test, he scribbled

$$= 2 \text{ gauss} \approx 1 \text{ gauss for small two}$$

We shall therefore refer to the equation:

$$2 \approx 1$$

as *Gleason's Approximation*.

Interestingly, *Gleason's Approximation* has recently attracted much attention from both the mathematical and engineering communities. Indeed, theorists have shown that in certain situations, *Gleason's Approximation* can be shown to be an equality. I have collected proofs for four such cases and will take my remaining space to share them with you.

Proof #1: As any student who has taken EE 333 knows,

$$\exp(j2\pi) = 1.$$

Take the natural logarithm of both sides, divide both sides by $j2$ and add one to both sides. The result is the equality form of *Gleason's Approximation*.

Proof #2: Clearly,

$$(d/dn)n^2 = 2n \quad (1)$$

Also,

$$\begin{aligned} n^2 &= n \cdot n \\ &= n + n + \dots + n \text{ (n terms)}. \end{aligned}$$

UW Ph.D STUDENT TAKES FIRST PLACE IN PAPER COMPETI- TION

Shira L. Broschat, Ph.D Student, captured first prize in the 1988 Student Prize Paper Competition at the National Radio Science Meeting in Boulder, Colorado earlier this month. Her prize winning paper was entitled "The Phase Perturbation Technique Versus an Exact Numerical Method for Random Rough Surface Scattering."

The competition was open to all Ph.D students from universities throughout the United States. Second and third prize went to an MIT student and a University of Rochester student, respectively. For taking first place, Broschat received \$1000 as well as travel expenses.

Broschat is completing her Ph.D under Professor Ishimaru and is currently working with Eric Tharosos of Applied Physics Labora-

Winter Thing Scheduled

This year's *Winter Thing* will be held from 7:00 P.M. to 12:00 Mid-night at the South Campus HUB on Friday, February 26, 1988. The purpose of the activity-filled evening is to bring the faculty, staff and students together in an informal and relaxed atmosphere. By interacting with each other during the scheduled games and demonstrations, the participants can foster a friendlier relationship than just working associates.

Last year's successful *Winter Thing* included activities as diverse as a ping pong tournament to a demonstration of clock making. It was widely attended by the students, staff, and faculty of the EE Department. While no definite events have been arranged yet, expect more of the same this year!

Admission to the *Winter Thing* is FREE! Make sure to reserve a slot in your schedule for the *Winter Thing*.

continued from page 4

department's technician, who generously donated his time and skills to the project.

Future plans for the lounge include the acquisition of a carpet for the new sitting area.

continued from page 4

Substituting into equation (4) gives $1 = 2$ and our proof is complete.

I'm certain that Hector did not realize the mathematical rigor that his approximation would attract. I've tried to contact him to tell him of his fame but have thusfar been unsuccessful. The last I heard, he was a Congressional Economist in charge of generating large federal, social and military spending agendas. I understand that, in light of the deficit, he is using a corollary of his approximation to justify the spending.

Advising Office Announcements

Application for Admissions

For those seeking to enter the EE Department: applications for admission to the Electrical Engineering Department and the Computer Engineering Program are due by February 1, 1988.

Scholarship Deadline

College of Engineering scholarship applications are available in the Advising Office (EEB 215). Deadline for submission of applications is March 1, 1988.

MSEE Deadlines

In order to graduate this quarter, the March 1st deadline for completing MSEE requirements (final and thesis) must be met. To graduate Spring Quarter without having to register, the deadline is March 18, 1988.

IEEE SWEATSHIRTS

Exciting bold colors!

Available in:

Blue with gold letters
White with Purple letters
(Available in M, L, XL; SM limited)

\$15.00 for members
\$20.00 for non-members