



BRIDGE of Eta Kappa Nu



Cecelia Jankowski
1990 Winner
Outstanding Young Electrical Engineer Award

Feature Articles:

**Announcing The Vladimir Karapetoff Eminent Members' Award
Castle Howard (from the files of the late Paul K. Hudson)**



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May 1991
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**Announcing
The Vladimir Karapetoff
Eminent Members' Award**

**by
Donald Christiansen**



Dr. Vladimir Karapetoff

The Eta Kappa Nu Board of Directors has announced the establishment of an award in honor of Vladimir Karapetoff, an Eminent Member of HKN and Fellow of IEEE, who died in 1948.

The award, the Eta Kappa Nu Vladimir Karapetoff Eminent Members' Award, is to be made annually to an electrical engineering practitioner who has distinguished himself through an invention, a development, or a discovery in the field of electrotechnology. The fund to support the award was initiated through a bequest from Dr. Karapetoff's wife, R. M. Karapetoff Cobb, herself a distinguished chemical engineer.

A monetary honorarium will be provided to the recipient (or shared by the recipients) of the award.

Factors that will be weighed by the jury will include the impact and scope of applicability of the invention, development, or discovery; its impact on the public welfare and standard of living and/or global stability; and the effective lifetime of its impact.

Dr. Karapetoff was born in St. Petersburg, Russia, January 8, 1876. His father was an engineer and his mother a student at a military medical school.

Dr. Karapetoff emigrated to the United States in 1902, and became a naturalized citizen in 1909.

In 1904 he joined the engineering faculty of Cornell University as an

assistant professor. In 1908 he was made a full professor and continued in that capacity until he retired from active teaching in 1939.

In an account of Dr. Karapetoff's career, his Cornell University colleagues R. F. Chamberlain, N. A. Hurwitz, and Everett M. Strong, recalled his continuing dedication to Eta Kappa Nu. During World War II he was commissioned a Lt. Commander in the U.S. Navy. But beginning in 1942, Kary, as he was known to his associates, began to lose his sight in both eyes, and despite temporary relief through operations, he ultimately lost his sight and schooled himself in Braille and "talking books."

Even after his blindness he seldom missed the annual Eta Kappa Nu Award dinner in New York City, and would address them in "refreshingly original and lucid expositions" of his technical interests. Fellow HKN members viewed these occasions as sort of a "national Kary reunion." His handicap notwithstanding, his cheerfulness, determination, and ingenuity prevailed.

His colleagues remembered him as an accomplished musician on piano, violincello, and double bass. He toured the country giving recitals and lectures on Wagner, Liszt, and other major composers, and developed a five-string cello on which violin music could be played. He received an honorary Doctor of

Music degree from the New York College of Music.

Dr. Karapetoff was the author of several standard texts on electrical engineering that were widely used and revised through several editions, as well as other texts on electrical and magnetic currents, electrical testing, and engineering mathematics.

He was a member of AIEE, the Franklin Institute, the AAAS, the American Mathematical Society, the Mathematical Society of America, the American Physical Society, the U.S. Naval Institute, and the U.S. Naval Reserve Officers' Association.

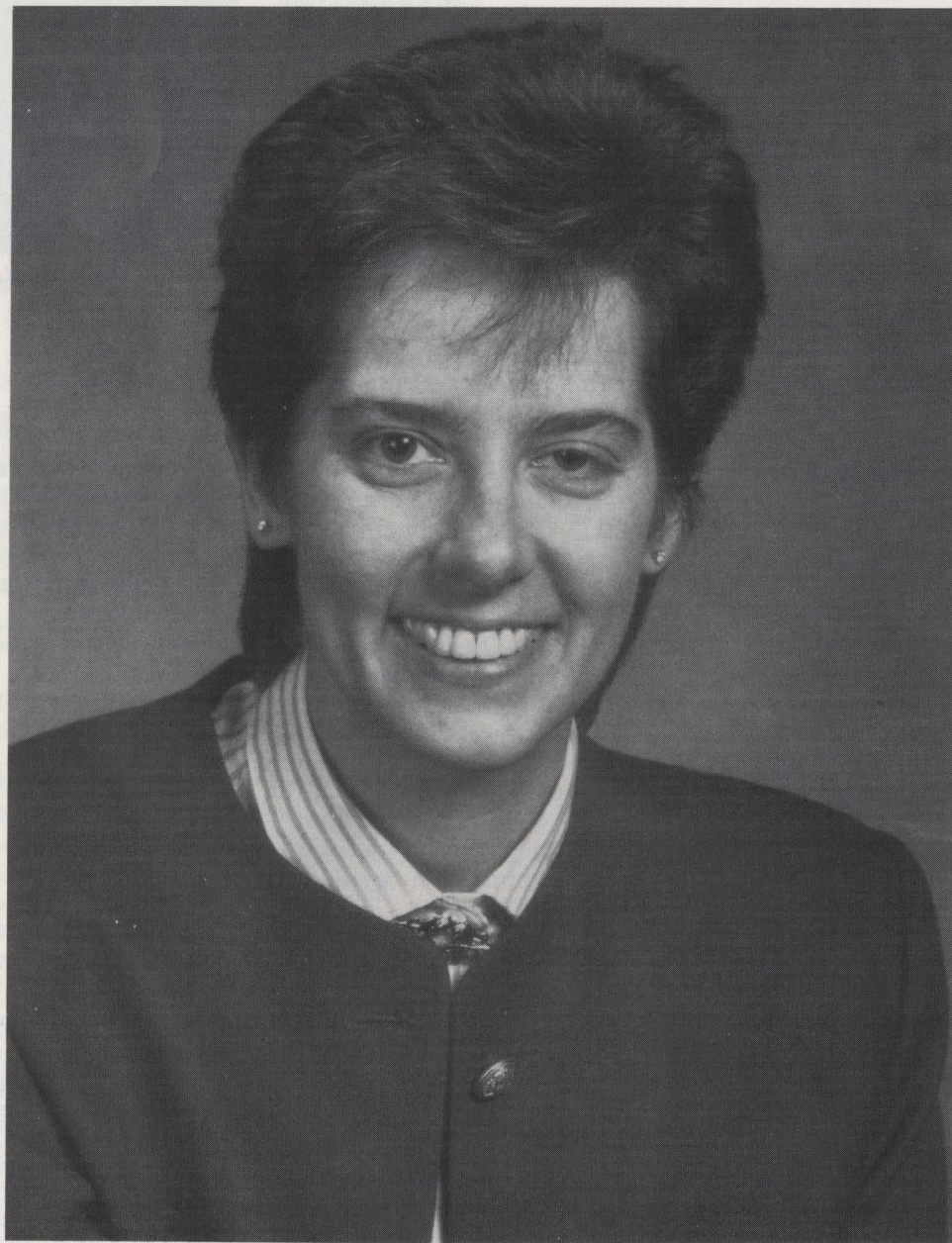
Professor Simpson Linke, writing in the Winter 1984-85 *Engineering Cornell Quarterly*, cited the following excerpt from Karapetoff's *Electrical Laboratory Notes*, published in 1906, as reflective of the flavor of EE studies in that era:

In coming to the laboratory, bring with you a slide rule, an inch rule or tape, a speed counter, a screw driver and a pair of pliers [sic]. This will save you time and trouble of looking for them or borrowing them. Do not forget to have a pocket knife for skimming off wire; a bicycle wrench is also sometimes very handy to have.

Nominations for the first Vladimir Karapetoff Eminent Members' Award are now being solicited. Nomination forms and guidelines may be obtained from Donald Christiansen, Eminent Member Committee Chairman, 434 West Main Street, Huntington, N.Y. 11743.

OUTSTANDING YOUNG EE AWARD

by Michael R. Hajny, Chairman, OYEE Award Committee



CECELIA JANKOWSKI

Cecelia Jankowski is the Outstanding Young Electrical Engineer of 1990. Her award was presented at the 55th Anniversary OYEE Eta Kappa Nu Banquet in New Brunswick, New Jersey on April 29, 1991.

At the same ceremony Patrick O. Nunally and Kellie J. Peterson were awarded Honorable Mentions for 1990.

Cecelia Jankowski is an Engineering Specialist for Digital Processing at the Grumman Corporation,

Bethpage, New York. She is named the Outstanding Young Electrical Engineer for 1990 by virtue of her notable contributions to computer-aided engineering and digital signal processing, and for her involvement in community and professional activities.

Patrick O. Nunally is a Design Specialist with General Dynamics, Pomona, California. He is named Honorable Mention for 1990 by virtue of his technical

contributions to the areas of signal processing and microelectronics design, and for the application of his technical knowledge for the betterment of his community.

Kellie J. Peterson is a Supervising Engineer of Transmission Planning at the Los Angeles Department of Water and Power, Los Angeles, California. She is named Honorable Mention for 1990 by virtue of her notable contributions to the development and testing of high voltage direct current transmission systems; and, for her contributions to civic, social, and professional societies.

Four other engineers were recognized as first time finalists:

- M. Abdul Awal, AT&T Bell Laboratories, Princeton, New Jersey
- Alan C. Bovic, The University of Texas, Austin, Texas
- Donald D. Davis, Jr., AT&T Bell Laboratories, Norcross, Georgia
- Jeffrey L. Scruggs, Texas Instruments Incorporated, Dallas, Texas

The award winners were honored for their contributions to electrical and computer engineering, and to society at large. Cecelia Jankowski was nominated by Norman Lewin of the Grumman Aerospace Corporation. Patrick O. Nunally was nominated by Dr. H. P. Schmid, Air Defense Systems Division, General

Dynamics, Pomona, California. Kellie J. Peterson was nominated by Vernon L. Pruett, Engineer of System Development, Los Angeles Department of Water and Power, Los Angeles, California.

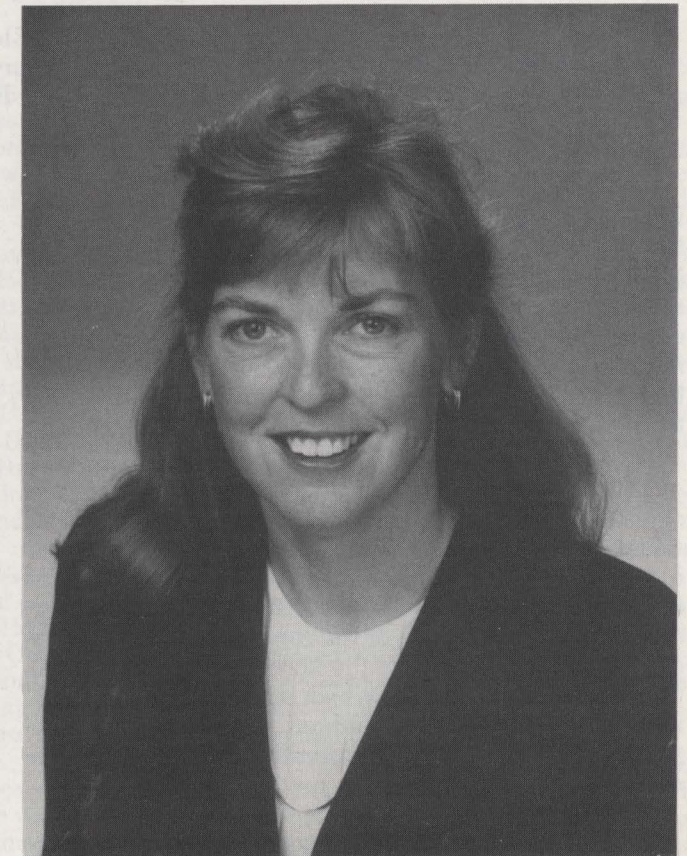
The Eta Kappa Nu Outstanding Young Electrical Engineer Award is given annually to young electrical and computer engineering graduates for meritorious service in the interest of their fellow man as well as for outstanding achievements in their chosen profession.

Selection of the winner and honorable mention(s) is based on accomplishments; it is not influenced by the newsworthiness or commercial value of a contribution. As we all know, it sometimes takes many years for technical discoveries to be included in commercial product development. A well known example is the commercial applications of technology promoted by NASA in the 1960's and 70's, which gave the world such diverse products as Teflon and miniature components. The process of facsimile was invented in 1842, yet only recently have FAX machines become a large commercial success. Other examples include the areas in which this year's winner works: computer aided engineering, and digital signal processing.

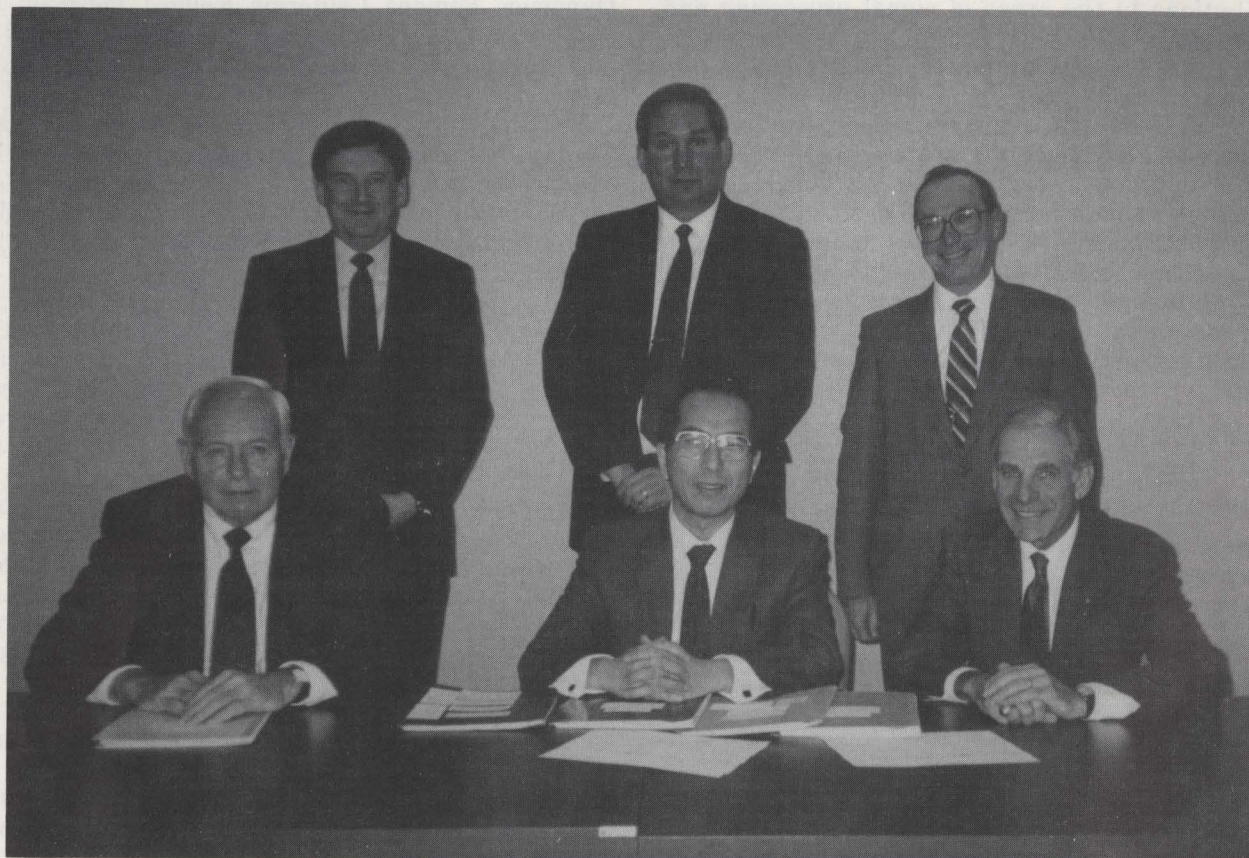
In the same way, contributions to local neighborhoods and schools, religious organizations and the arts can take years to reach fruition. The Eta Kappa Nu recognition is awarded to electrical engineers to emphasize that their service to mankind is manifested



Patrick O. Nunally
HONORABLE MENTION



Kellie J. Peterson
HONORABLE MENTION



The Jury of Award, 1990 Outstanding Young Electrical Engineer Selection. From left to right: Standing, Dr. Peter Smith, Mr. Michael R. Hajny, Mr. Robert F. Arehart; Seated, Mr. Arthur Hauspurg, Dr. Hisashi Kobayashi, Mr. Henry L. Bachman.

not only by achievements in purely technical areas, but in a variety of other ways as well. Eta Kappa Nu holds that an education based upon the acquisition of technical knowledge and the development of analytical and logical thinking is a prerequisite to achievement in many lines of endeavor. This year's winner joins a long list of individuals who have brought distinction to themselves, their community and the profession.

Those honored with this prestigious award are selected each year through a well-defined process which has remained virtually unchanged since its inception. The nomination process involves the initiative of the nominator and the participation of a number of references in support of the candidate. The dossiers of all nominees are carefully screened by the Award Organization Committee which selects up to ten finalists. These finalists are judged by a jury of highly prestigious leaders in the profession for final selection of the winner and honorable mention(s).

In 1990, the Jury of Award consisted of the following individuals:

- Henry L. Bachman, Past President of IEEE, and Vice-President, Hazeltine Corporation, Greenlawn, New York

- Arthur Hauspurg, Chairman of the Board and Chief Executive Officer, Consolidated Edison of New York, Inc., New York, New York
- Dr. Hisashi Kobayashi, Dean, School of Engineering and Applied Sciences, Princeton University, Princeton, New Jersey
- Dr. Peter Smith, Vice-President Engineering, NBC Operations and Technical Services, 30 Rockefeller Plaza, New York, New York
- Robert F. Arehart, President, Eta Kappa Nu Association
- Michael R. Hajny, Chairman of the HKN Award Organization Committee, and Vice-President Engineering, Scientific Columbus, Inc., Columbus, Ohio

Nominations for the award are solicited each year through the Eta Kappa Nu Award Organization Committee. Nominations may be made by any member, or group of members, of Eta Kappa Nu; by leaders from industry; by any Section or Society of the Institute of Electrical and Electronics Engineers, Inc.; by the head of the electrical and computer engineering department of any U.S. college or university; or by other individuals or groups, who in the opinion of the Award Organization Committee, are properly qualified to make nominations.

The nominations for the 1991 awards should be submitted to the Chairman of the Award Organization Committee, or to the Executive Secretary of Eta Kappa Nu, by August 1, 1991. An eligible candidate is one who:

- has an electrical engineering degree (BS, MS, or PhD) from a recognized U.S. Engineering school,
- will have been graduated not more than 10 years as of May 1, 1991 from a specified baccalaureate program, and
- will not have reached his or her 35th birthday as of May 1, 1991.

Awards are based upon (1) the candidate's achievements of note in his or her chosen work, including inventions of devices or circuits, improvements in analyses, discovery of important facts or relationships, development of new methods, exceptional results in teaching, outstanding industrial management, or direction of research and development; (2) the candidate's service to community, state, or nation, such as activity in philanthropic, religious, charitable, or social enterprises, leadership in youth organizations, or engagement in civic or political affairs; and, (3) the

candidate's cultural and aesthetic development, such as work done in the fine arts, architecture or the dramatic arts. Studies in history, economics, or politics are also highly valued as well as any other noteworthy accomplishments including participating in professional societies and other organizations.

The Award Organization Committee members are: Michael R. Hajny, Scientific Columbus, Inc. (Chairman); Ralph J. Preiss, IBM Corp. (Vice Chairman/Secretary); Clarence A. Baldwin, Westinghouse Electric Corp.; Robert A. Bartolini, SRI David Sarnoff Research Center; Donald Christiansen, IEEE Spectran; James A. D'Arcy, General Electric Company; Larry Dwon, Consultant (formerly of American Electric Power Service Corporation); Irving Engelson, Technical Activities, The Institute of Electrical and Electronics Engineers, Inc.; Anthony F. Gabrielle, Gulf State Utilities; Quayne Gennaro, Design by Hilton, Inc.; Willard B. Groth, Consultant (formerly of IBM Corporation); James D. Hebson, Jr., Public Service Electric and Gas Company; William E. Murray, Douglas Aircraft Company; Berthold Sheffield, RCA Corporation (retired); Joseph J. Strano, New Jersey Institute of Technology; Lawrence D. Wechsler, General Electric Company.

David R. Medrow Awarded Honorable Mention in Norman R. Carson Outstanding EE Junior Program

David Medrow has been selected for Honorable Mention in the 1990 Eta Kappa Nu, Norman R. Carson, Outstanding EE Junior Award Program. Having served as President, Vice-President and Special Programs Chairman for Tau Beta Pi, and as Treasurer, Recording Secretary and Social Chairman for Eta Kappa Nu, Gamma Theta Chapter, at the University of Missouri-Rolla (UMR), he has been very active in honor society activities. Pursuing a Baccalaureate Degree in Electrical Engineering, he has maintained a 3.94/4.00 GPA.

He has been on the Honor Roll every semester and continually enrolled in the UMR EE Honors Program. He is a

Board of Curators Scholar, a Missouri Society of Professional Engineers Scholar and Recipient of the William L. Everitt Student Award of Excellence from the National Engineering Consortium.

He has been active also in Phi Eta Sigma Freshman Honor Society, Phi Kappa Phi Scholastic Honor Society, Blue Key National Honor Society, Kappa Mu Epsilon Mathematics Honor Society, Kappa Kappa Psi Honorary Band Fraternity, UMR Chancellor's Leadership Class, IEEE Professional Society-Student Branch, Lutheran Student Organization, Concert Band, Pep Band, and Marching Band as a Squad Leader.

Having career interests in production and the production environment, his professional employment includes Amoco Chemical Company, Alvin, Texas, Instrument and Electrical Engineer, summer 1990, and four Coop Work Periods with General Dynamics, Fort Worth, Texas.

As a UMR/Amoco summer student, he coordinated with vendors, developed scope of work documentation, did technical research and modification, submitted engineering proposals, and received training in quality process and statistical quality control, time management and general orientation.

As a UMR/General Dynamics Coop student, he was involved in the following projects during his four Coop Work Periods: Mission Planning; Avionic System Design; Flight Test Plans and Control; and Radar Design.

In Mission Planning, he programmed in C for the display of digitized maps and worked with Sun and Silicon Graphics workstations. In Aviation System Design, he performed preparation of system and software requirements documentation for upgrades to the F-16C/D, and worked on an Apollo workstation.

In Flight Test Plans and Controls, he was involved with preparation of Flight Test Department inputs to statements of work and estimates. He also prepared flight test modification data documentation. In Radar Design, he worked with the design and development of analog, RF, and digital circuits on a Valid workstation; and he documented development of the circuits.

He is experienced with the Assembly, C, FORTRAN, BASIC and FORTH languages and has gained valuable experience and insight through his earlier work in the UMR Computer Center and the UMR Bookstore.

He has also been very active in intramural sports: softball; volleyball and soccer.



Drifting Around the Kingdom

Part Four

Castle Howard

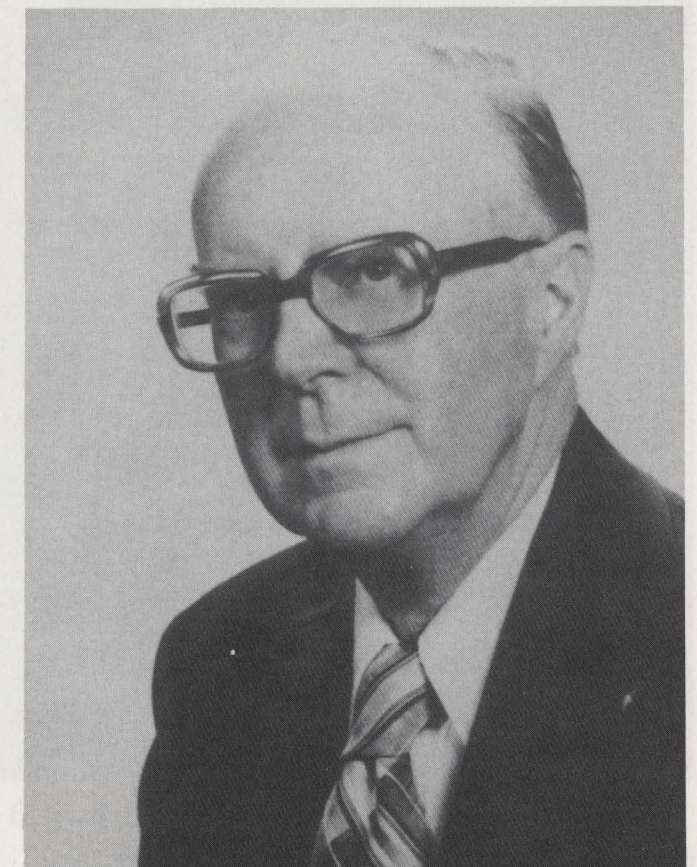
by
Paul K. Hudson

EDITOR'S NOTE: This article was prepared by Paul Hudson just before his death. We felt it appropriate to include it in this issue. Other articles prepared by Paul for future issues of the Bridge are on file in the Bridge Office and will be used at later times.

Our room in the Viking hotel at York had quite a number of surprises and pleasures. The hotel is located right on the banks of the Ouse river and I spent a lot of time just gazing out of the window at the scenic charter boats passing below. The river has always been important to the city. In centuries past it was the main method of transportation and commerce. Now it is pleasure. (see photo)

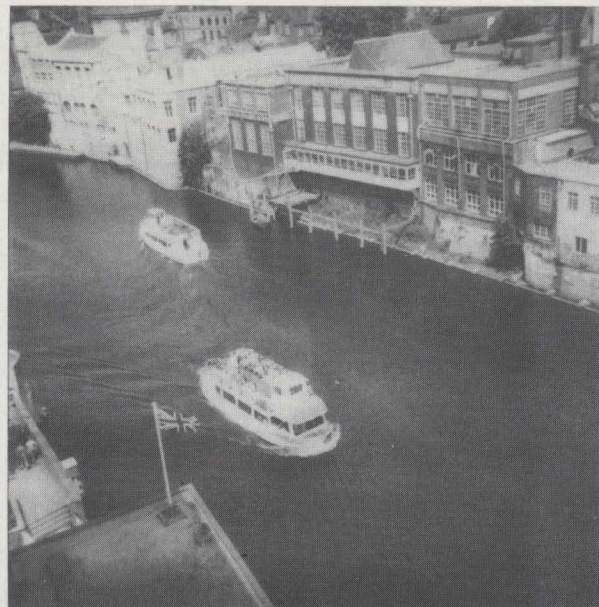
There was another matter that surprised me but shouldn't have. It is something that every school child knows about but I had never before experienced it. I woke up in the middle of the night and noticed that the room was not as dark as it should have been. It was about 2:00 AM. I got up and went over to the window and looked out. To my surprise the sky was a bright blue. Sunrise had started. In the winter time the days in York must be very short.

Another surprise I got was when I went into the bathroom the first time to wash my hands. The basin looked like any other. There were two faucets—one hot and one cold—and a spigot where the water mixed to give the right temperature. But when I started to wash I got a nasty burn. I then examined the spigot and found that it had a septum in it that prevented the hot and cold water from mixing. Why in the world a plumbing company would manufacture anything like that I wouldn't know. Maybe he hates the world and wants to burn people.

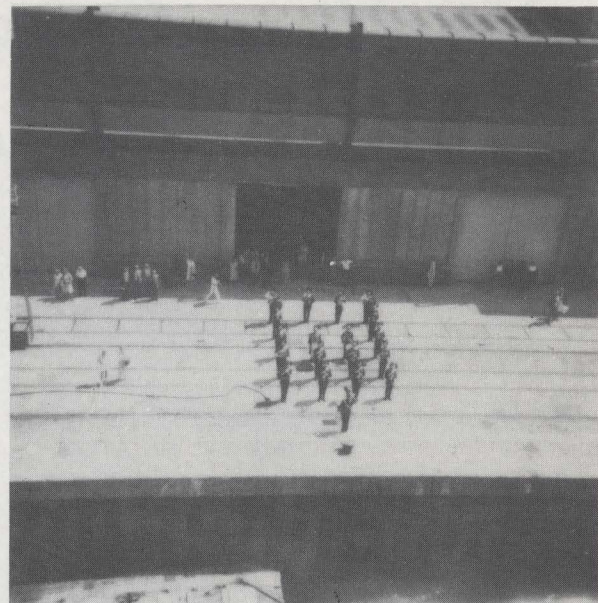


Author, Paul Hudson

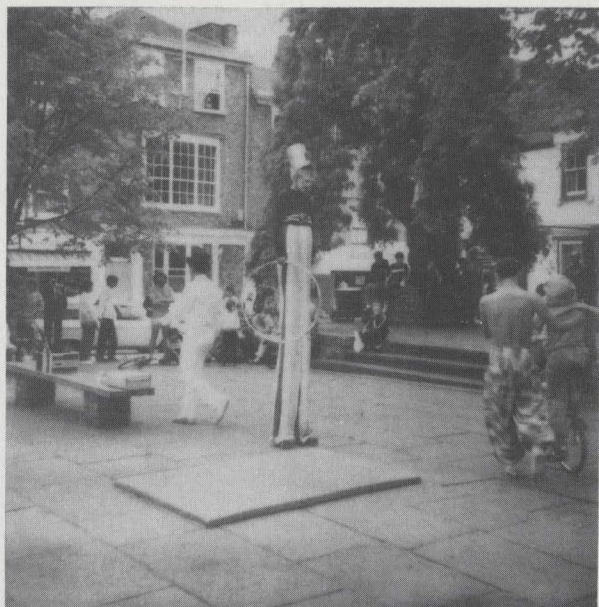
I got the impression that the citizens of York really enjoy their city. On Friday and Saturday nights the young people would parade the town in large groups, singing songs and in general having a good time. Some of the wilder ones would take off most of their clothes and jump off the bridges into the river. That was against the law but young people don't concern themselves with the law very much. One Sunday morning after the service in the York Minster we came outside and found a small amateur circus performing in King's Square. After they finished their



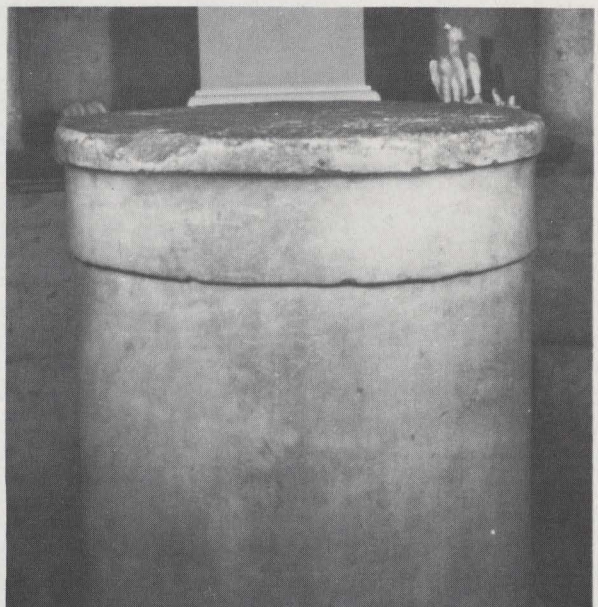
The Ouse River



The King's Squad



Circus People



The Altar of the Oracle at Delphi



Castle Howard

performance they took up a free-will offering. (see photo). That made me a little homesick because I have watched the same sort of thing in Central Park, New York, on many a Sunday afternoon.

I had one other item of business or pleasure before I left York. Castle Howard is only fifteen miles north of town and no one should ever come to York without going there. The Howard family of England has been important for centuries. Of course, like many other famous families, they got into trouble once in a while by choosing the wrong side in a conflict, or otherwise misbehaving. Catherine Howard was one of the wives of Henry VIII and he got rid of her the hard way because he thought she had been naughty.

Howard Castle is one of the most magnificent residences in the world. Anyone who doubts this should try to buy it. Price the house and all of its treasures inside and we are talking about maybe half a billion dollars. It really is a residence but, in truth, the Howard family lives in only one wing. The rest of it is used to obtain tourist coins which are needed to pay the real estate taxes. Being rich is not as much fun as it used to be.

After we paid our way in I asked for the office of the Curator and Director, Mr. Edmund Lamb. He and I have had correspondence over past months and I very much wanted to meet him. He welcomed us warmly in his office. He is a very cordial and intelli-

gent man, although maybe a bit of a roughneck. After we got the pleasantries over with he said to me, "Hudson, are you on holiday?" I said that I was. He replied, "Then what in the devil are you doing here. When I go on holiday I always go to Miami beach." I tried to explain that I get all the sun shine I want in my home town but he did not see how that was possible.

Castle Howard has many treasures but there was one I wanted to see more than any other. They have there the altar of the Oracle at Delphi. Edmund knew I wanted to see it so he took us there himself. It was

located in a corner of a hall. I was astonished. I said to Edmund, "You people don't seem to realize that this altar is one of the most historic and valuable things in the whole world." He laughed and said, "Yes, I know. My friends down at the British Museum tell me that Castle Howard is the only place in England that would fail to put the altar in the center of the most important room in the place." After that statement I saw no point in saying anything more. (see photo)

The Oracle at Delphi is usually portrayed as a little old woman. She has an altar where famous people come to ask their fortune. If a King was about to



The Great Hall



The Chapel



The Long Gallery

start a war he would go to her and ask what the result would be. She would answer in some obscure way such as, "If you see three birds fly over an oak tree on the day the battle starts, you will win." That sort of thing. Perhaps in the beginning it was that way. But in later years the Oracle business was taken over by a powerful political machine that tried to influence the world. And I might add, it became very wealthy from the fees.

I examined the altar and found that it had three holes in the top. These were to hold the tripod which in turn held the sacred flame. The tripod and flame were lost long ago. (see photo)

In a music room there were several antique pianos, and a lady who told us about them, and the rest of the room. I said to her, "I think the one on the end is a harpsichord." She replied, "No, it is a piano." I looked at it again and then said, "I know I would get killed if I touched it but would you be allowed to strike one key for me." She said, "I might get in trouble but I

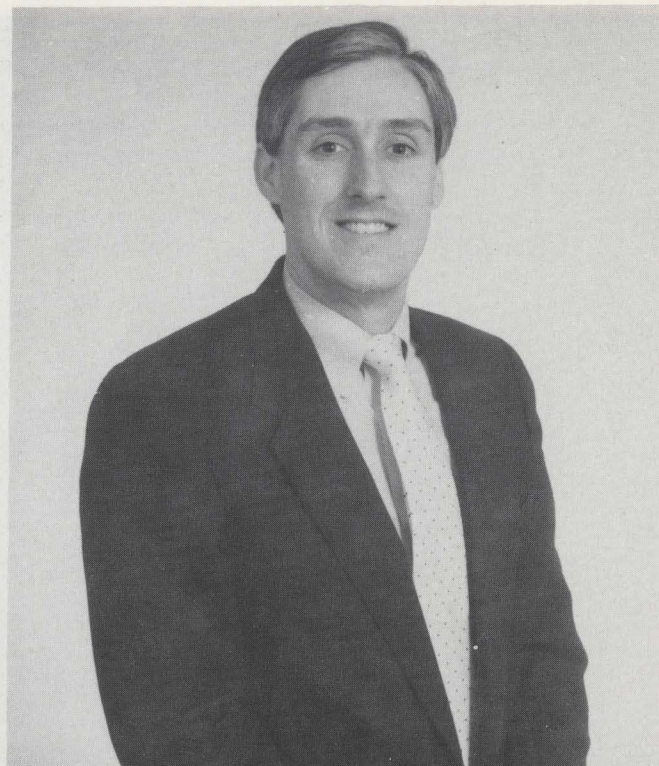
will do it anyway." She struck a key. It was a piano. It must be that sometime in the past pianos were patterned after harpsichords, or visa versa.

In the Great Hall I said to a guide, "Why do you call this place a Castle. To be a castle, the place must be fortified and there are none here that I can see." He said, "Well, there is a wall outside." He was right but it was not much of a fortification. It did not even go completely around the building. The building is less than 300 years old and there was no need for castles in the 18th century. I think it was called a castle in the same sense that every man calls his home a castle. But everything considered, it was one of the most magnificent buildings I have ever seen.

There are a number of out-buildings including a family mausoleum that was so beautiful that Walpole said it would tempt one to be buried alive, and a Temple to the Four Winds that Sacheverell Stitwell said was a greater work of art than most of the Cathedrals.

The C. Holmes MacDonald Outstanding Teaching Award Honorable Mention

by Paxton Marshall



Barry W. Johnson

Barry W. Johnson is an Associate Professor of Electrical Engineering at the University of Virginia. He received the B.S.E.E. (with high distinction), M.E.E.E., and Ph.D. degrees from the University of Virginia in 1979, 1980, and 1983, respectively.

Dr. Johnson was with the Government Aerospace Systems Division of Harris Corporation from 1982 to 1984 and served as an Adjunct Professor at the Florida Institute of Technology in 1983-1984. He joined the University of Virginia as an Assistant Professor of Electrical Engineering in 1984 and was promoted to Associate Professor in 1989. His research and teaching interests are in the areas of fault-tolerant computing, VLSI testing, and microcomputer-based systems. He is the author of a textbook entitled *Design and Analysis of Fault-Tolerant Digital Systems* which was published by Addison-Wesley Publishing Company in 1989. In addition, Dr. Johnson is the author or co-author of more than 50 papers in his research areas of interest.

In 1984 Dr. Johnson co-founded the Center for Semicustom Integrated Systems (CSIS), an interdisciplinary research center focused on fault tolerance, testing, and VLSI technologies. The CSIS currently involves 10 faculty members, 2 full-time research staff members, and approximately 30 graduate students. The Center receives research funding from the National Science Foundation (NSF), the Defense Advanced Research Projects Agency (DARPA), the Virginia Center for Innovative Technology (CIT), the National Aeronautics and Space Administration (NASA), and six industrial sponsors.

Dr. Johnson has taught courses on fault-tolerant computing, microcomputers, digital systems design, advanced switching theory, and microcomputer interfacing. For the past two years he has chaired the department's Undergraduate Committee which has undertaken a detailed study and revision of the electrical engineering curriculum at the University of Virginia.

Dr. Johnson is the faculty advisor for the student chapter of Eta Kappa Nu at the University of Virginia and is a member of Eta Kappa Nu, Tau Beta Pi, and Sigma Xi. He is a Senior Member of the IEEE and a member of the IEEE Computer Society and the IEEE Industrial Electronics Society. He was recently elected as the Second Vice-President of the Computer Society and is a voting member of the Computer Society's Executive Committee and Board of Governors. He is also a member of the Editorial Board of the *IEEE Transactions on Computers*. Additional volunteer activity in the IEEE includes being a member of the Finance Committee of the Technical Activities Board (TAB).

Dr. Johnson received a 1990 Outstanding Faculty Award from the State Council of Higher Education in Virginia. In addition, he was the recipient of the University of Virginia Alumni Association's Outstanding Young Faculty Award in 1989 and the Department of Electrical Engineering's Young Faculty Teaching Award in 1988. Dr. Johnson's paper entitled "A Course on the Design of Reliable Digital Systems" received the Outstanding Paper Award from the *IEEE Transactions on Education* in 1987. He has also received a Certificate of Appreciation, an Outstanding Contribution Award, and a Meritorious Service Award from the IEEE Computer Society.

The Johnson family includes his wife Susan and one daughter, Ashby, who is 11 years old. Susan teaches third grade in the Charlottesville area, and Ashby is a sixth-grade student. The family spends much of its spare time participating in sporting events of various types.

Metzger Named TD for Strategic Communications

Dr. Louis S. Metzger has been promoted to Technical Director of Strategic Communications within the Center for Air Force C³ Systems at the MITRE Corporation in Bedford, Massachusetts. He had been Associate Technical Director of Tactical Communications since joining the company in 1987.

MITRE is an independent, not-for-profit systems engineering firm engaged in scientific and technical activities for the public benefit under contract to a variety of government agencies. The firm is based

in McLean, Virginia, as well as Bedford, Massachusetts.

Before joining MITRE, Metzger was an Assistant Vice-President at M/A-COM Government Systems, where he managed the firm's Boston Engineering Center. Earlier, he worked at MIT's Lincoln Laboratory as Associate Leader of the Terminal Technology Group and as Assistant Leader of the Satellite Communications System Engineering Group.

Metzger earned all his degrees from the Massachusetts Institute of Technology: an SB in 1969, an SM in 1971, and a PhD in 1975, all in electrical engineering. He is a

member of the Tau Beta Pi, Eta Kappa Nu, and Sigma Xi honorary societies. He has held several offices, including Chairman, in the Boston Chapter of the Institute of Electrical and Electronics Engineers' Communications Society, and is a member of the MILCOM Conference Board. He was also on the Technical Committee on Communications Systems for the American Institute of Aeronautics and Astronautics, and has served on the Air Force Studies Board Committee on Tactical Communications.

Lou Metzger, his wife Margaret, and their son Michael live in Wellesley, Massachusetts.

In Memoriam John Bardeen Nobel Laureate

John Bardeen was born in Madison, Wisconsin on May 23, 1908. His father, Charles Russell Bardeen, was the first graduate of the Johns Hopkins Medical School and founder of the Medical School at the University of Wisconsin. His mother, Althea Harmer, studied oriental art at the Pratt Institute and practiced interior design in Chicago. He was one of five children, and is survived by his sister, Ann Bardeen Henschel.

John received his elementary and secondary education in Madison. He studied electrical engineering at the University of Wisconsin, receiving a B.S. in 1928 and an M.S. in 1929. The three years 1930-33 were spent doing research in geophysics at the Gulf Research Laboratories in Pittsburgh, Pennsylvania. In 1933, he returned to graduate studies in mathematical physics at Princeton University, where he got his first introduction to solid state theory from Professor E. P. Wigner, and received his Ph.D. in 1936. The three years, 1935-38, were spent as a Junior Fellow of the Society of Fellows of Harvard University, where he worked with Professors J. H. VanVleck and P. W. Bridgeman. From 1938-41, he was at the University of Minnesota and from 1941-45, at the Naval Ordnance Laboratory in Washington, D.C. In the fall of 1945, he joined the newly formed research group in solid state physics at the Bell Telephone Laboratories,

Murray Hill, New Jersey. It was there that he became interested in semiconductors and with W. H. Brattain discovered the transistor effect in late 1947. He left Bell Labs in 1951 to become Professor of Physics and Electrical Engineering at the University of Illinois, Urbana, where upon retirement in 1975 he became Professor Emeritus.

Bardeen, a Fellow of the American Physical Society, served on the Council from 1954-57 and was President in 1968-69. He was elected to the National Academy of Sciences in 1954 and the National Academy of Engineering in 1972. He served on the U.S. President's Science Advisory Committee from 1959-62 and on the White House Science Council in 1981-82. He was a founding member of the Commission on Very Low Temperatures of the International Union of Pure and Applied Physics, member of the board from 1963-72, and chairman from 1969-72. From 1961-74 he was a member of the Board of Directors of Xerox Corporation.

Honors have included the Stuart Ballantine Medal, Franklin Institute (1952), Buckley Prize, American Physical Society (1954), John Scott Medal, City of Philadelphia (1955), Fritz London Award for low temperature physics (1962), the Vincent Bendix Award of the American Society for Engineering Education (1964), the U.S. National Medal of Science for 1965, the Medal of Honor of the Institute of Electrical and Electronic Engineers (1971), and the James Madison Medal of Princeton University (1973). He shared the 1956 Nobel Prize for Physics with W. H. Brattain and W.

Shockley for research leading to the invention of the transistor and the 1972 Nobel Prize with L. N. Cooper and J. R. Schrieffer for the theory of superconductivity. He received the distinguished Lomonosov Award of the Soviet Academy of Sciences in 1987. In 1990, the Sony Corporation established the John Bardeen Chair in Physics and Electrical and Computer Engineering at the University of Illinois at Urbana-Champaign. It was the largest single endowment ever made to an American university by Sony. Bardeen was one of 11 recipients of the Third Century Award honoring exceptional contributions to American creativity as part of the 200th anniversary of the U.S. patent and copyright laws. He was also named by Life Magazine as one of the 100 most influential people of the century.

Other achievements include medals from the University of Wisconsin varsity swim team and a hole-in-one in a golf tournament held at the Champaign Country Club.

Bardeen married Jane Maxwell in 1938. They have three children: James M. Bardeen, William A. Bardeen, and Elizabeth A. Bardeen Greytak. Their six grandchildren are: Charles G. Bardeen, Karen G. Bardeen, William T. Bardeen, David P. Bardeen, Andrew B. Greytak, and Matthew B. Greytak.

John Bardeen died in Boston, Massachusetts, on January 30, 1991, of cardiac arrest while recovering from exploratory surgery that revealed lung cancer.

Kappa Alpha Chapter Installed

Northern Illinois University

by
Salvador Garcia and James P. Bobis



Eta Kappa Nu Charter Members.

Northern Illinois is a young and dynamic engineering school. The state of being new has a challenge all of its own. Northern first needed to acquire ABET accreditation, and we achieved that milestone in 1990. After the accreditation, Northern Illinois University obtained the green light to start the honor society for electrical engineers. The challenges that Northern Illinois's engineering program has encountered has added to the strength of this young engineering school.

Northern Illinois University's Kappa Alpha Chapter of Eta Kappa Nu was installed on March 22, 1991. The formal induction ceremony was conducted at an off campus location, the Country Inn. A banquet preceded the formal ceremony. On this occasion, ten undergraduate students, twelve graduate students, five graduates, and three faculty members were inducted. The former chair of the electrical engineering department, Dr. Newell, gave an appropriate speech which stressed the significance and honor of belonging to Eta Kappa Nu.

The officers of this chapter are as follows:

President: Michael J. Costello
Vice-President: Salvador Garcia
Treasurer: Jerry P. Morrow

Corresponding Secretary: John S. Peterson
Faculty Advisor: Dr. James P. Bobis

Altogether, Eta Kappa Nu inducted 30 charter members into the chapter. The ten undergraduate initiates are:

Michael Costello	Scott Lang
Salvador Garcia	Tom Gill
Jerry Morrow	Steve Ferris
John Peterson	Robert Gatzke
Paul Machaner	Marcello Chilelli

The twelve graduate initiates are:

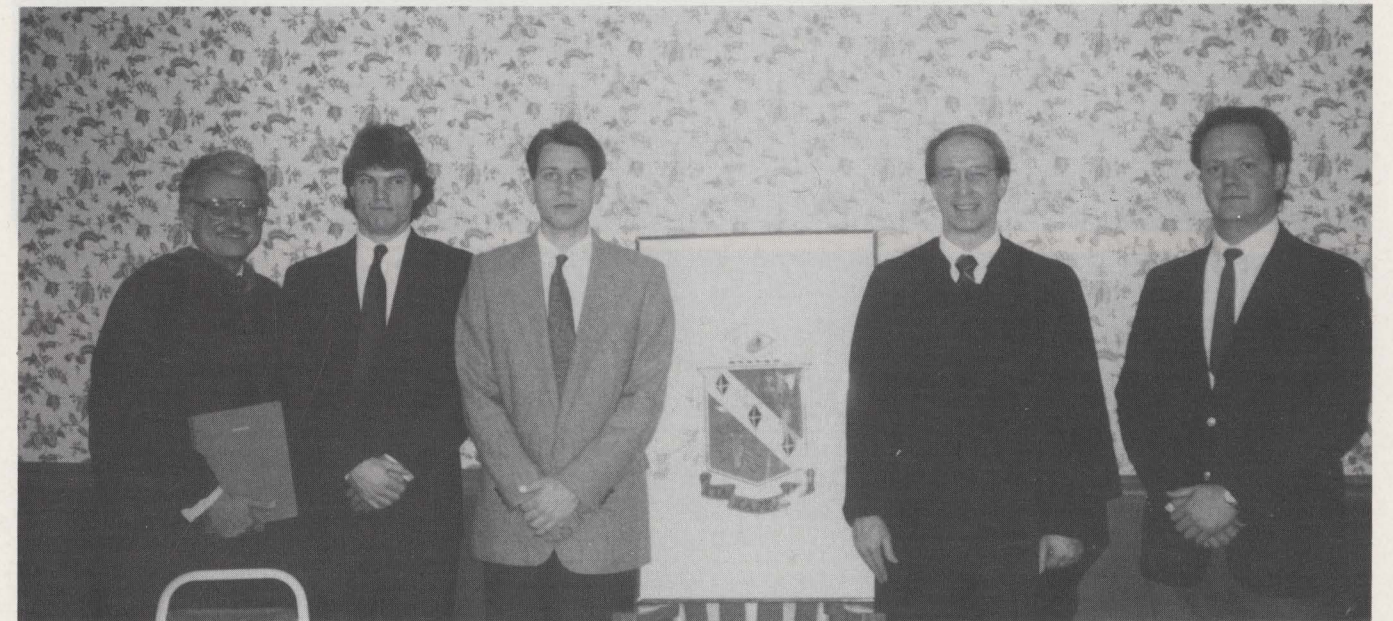
Dan Greenwood	Pei Chen
Jeff Kirchman	Darren Castle
Jim Bercaw	Shi Lan
Vytautas Brazuinas	Zhibing Pan
Sei-Yu Tsai	Shuhong Zhu
Yue Wu	Jier Chen

The faculty initiates are Dr. Genis, Dr. Kuo, and Dr. Woo. Five previous graduates were also inducted into this charter chapter and they include:

Charles Husted	Mark Kotzan
Robert Hunter	Yi Yuan
Dan Donato	



Eta Kappa Nu, Kappa Alpha Officers: (from left to right) John S. Peterson (Corresponding Secretary), Michael J. Costello (President), and Jerry P. Morrow (Treasurer).



Installing Officer with Kappa Alpha Chapter Officers: (from left to right) Dr. James P. Bobis (Faculty Advisor), John S. Peterson (Corresponding Secretary), Jerry P. Morrow (Treasurer), Dr. David G. Meyer (Representative from the Board), and Michael J. Costello (President).

Iota Omega Chapter Installed California State University, Fullerton

by
Maqsood A. Chaudhry



Initiates and guests at the banquet.

December 21, 1990 was truly a historic day when the **Iota Omega** Chapter was installed at California State University, Fullerton.

Although the Honor Society, Phi Kappa Phi, is on the campus, this installation marked the establishment of the first Honor Society within the School of Engineering.

The installation team representing the Los Angeles Alumni Chapter of Eta Kappa Nu was headed by Dr. Richard Cockrum. Initiation ceremonies were conducted in the conference room of the Engineering building and were followed by a banquet at the Fullerton Marriott.

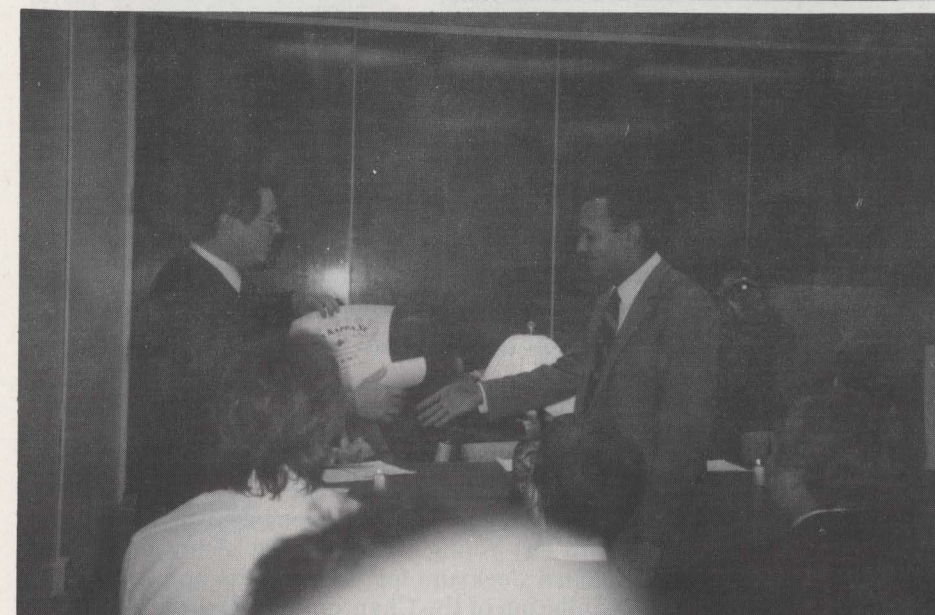
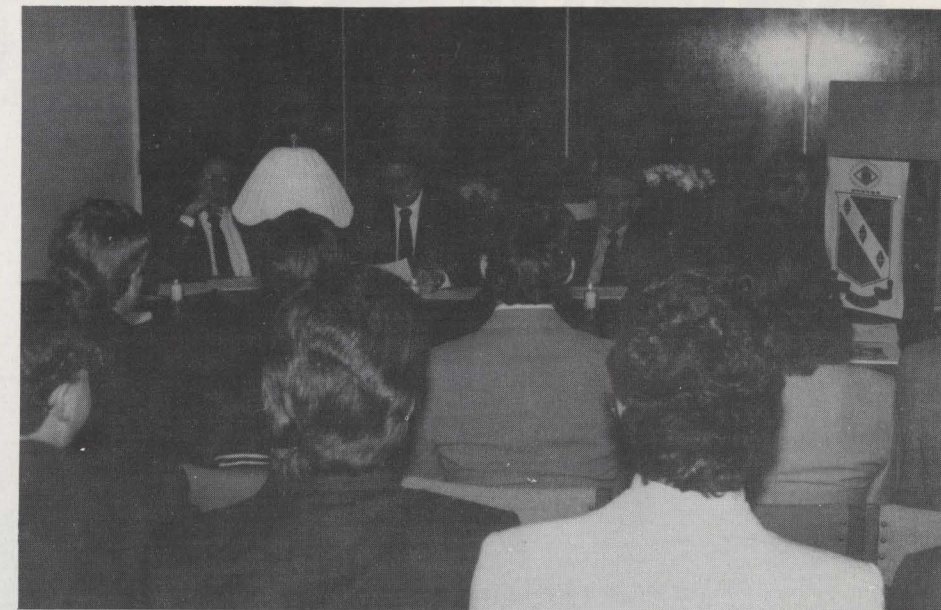
The initiation ceremonies began with the presentation of the Chapter Charter to Dr. Maqsood A. Chaudhry, HKN Faculty Advisor, by Dr. Cockrum.

He explained the purpose and goals of Eta Kappa Nu and instructed the initiates on the requisites of membership in HKN. This was followed by the initiation ceremony.

Mr. Tom Rothwell, Vice President and Group Manager of Data System Group, Hughes Aircraft Co., was keynote speaker at the banquet and gave a very inspiring address. He congratulated new members of HKN on their induction and instructed them that they, as Electrical Engineers, should always seek new knowledge and challenges and strive for excellence. He emphasized the importance of professional integrity. He stressed the need for participation of new members in the activities of Alumni Chapters of HKN.

Dr. Andy Bazar, Dean, School of Engineering also addressed the new members. He congratulated the

At Right:
The Initiation Team
Performing
the Initiation
Ritual.



At Left:
Maqsood A. Chaudhry,
Faculty Advisor
Receiving the Charter
from Richard Cockrum.

At Right:
Richard Cockrum
Distributing
Membership
Certificates
to Initiates.





Mr. Tom Rothwell, the keynote speaker at the banquet.

Electrical Engineering Department for the successful installation of this HKN Chapter as well as for a very successful ABET visit, which took place in October of 1990.

The installation ceremonies and banquet were attended by, among others, Dr. Andy Bazar, Dean, School of Engineering & Computer Science, Dr. Young Kwon, Chairman, Department of Electrical Engineering and family members and friends of the new members.

The President of the Zeta Omega Chapter at the University of California, Irvine, Mr. Parmesh Gopi represented his Chapter. The Epsilon Tau Chapter at the University of California, Santa Barbara was also represented.

The activities of the Iota Omega Chapter during this semester included tutoring by initiates and a picnic which was attended by the initiates and their family members. As one of its near future goals, the chapter plans to set up a small library inside the department of Electrical Engineering, which will house a small collection of used Electrical Engineering books which are used very often, as well as reference material to current textbooks used by the department. The library will also serve as a study room and will be funded through donations. The Chapter believes that the proximity of the library to the department will make

it more accessible than the University library which is located in a different building.

The Iota Omega Chapter wishes to extend special thanks to Dr. Young D. Kwon, Dr. Andy Bazar and Dr. Richard Cockrum for their efforts and support in the installation of the Chapter. My personal gratitude goes to Dr. J. Robert Betten, Executive Secretary of HKN, without whose help, this historic event would not have been possible.

Members:

- | | |
|-------------------------|------------------------|
| Maqsood Ahmed Chaudhry | Kevin Vashi |
| Dean Alan Gravdahl | Michael Anthony |
| Ronald Craig Holdsworth | Golackson |
| Donald Lee Walker | Aseel Anabtawi |
| Michael Thomas Kosco | Philip George Michaels |
| Diana Ivonne Gasteazoro | Benjamin John Pauly |
| Scott Paul Morris | Dana Gelles |
| Mozhdeh Eghterafi | Eric Charles Wight |
| Najafabadi | Karl Patrick Kennedy |

Installation Team:

- Wheatstone: Richard Cockrum
 Faraday: Jimmie D. Huff
 Ohm: Stuart McCullough
 Ampere: Mohammad A. Mossoudi
 Faculty Advisor: Maqsood A. Chaudhry

CHAPTER ACTIVITIES

**Purdue
Beta Chapter
Wins
Outstanding
Chapter
Award
for the
Tenth
Consecutive
Year**

**A Feature Article
is
being prepared
for
August 1991
Bridge**

**CONGRATULATIONS
BETA!**

**1989-90 Annual Report
Beta Gamma Chapter
Michigan Tech**

INTRODUCTION

During the 1989-1990 school year, the Beta Gamma Chapter of Eta Kappa Nu at Michigan Technological University endeavored to achieve the goals and ideals for which the founding fathers of Eta Kappa Nu stood.

This report contains the major activities of our chapter at Michigan Tech. Our intent is to show our chapter is acceptable according to the guidelines from which we were formed. We will try to be as precise and clear as possible in describing our activities in order to keep our report simple and to the point.

It is the hope of all the members and officers of Beta Gamma that our chapter

and the following report are favorable to the review committee appointed by the Board of Directors of Eta Kappa Nu.

CAMPUS ACTIVITIES

Options Night: Recurring; 25 hours; 8 members; Chairmen Michael Collins, Walter Hart; Fall Semester—Every year, during fall term, Beta Gamma puts on "Options Night" for EE students, although anyone is welcome to attend. The purpose of this event is to let EE students who have not chosen an option view a demonstration about each of the options offered. Hopefully, this will aid the student in determining the right option for him/her.

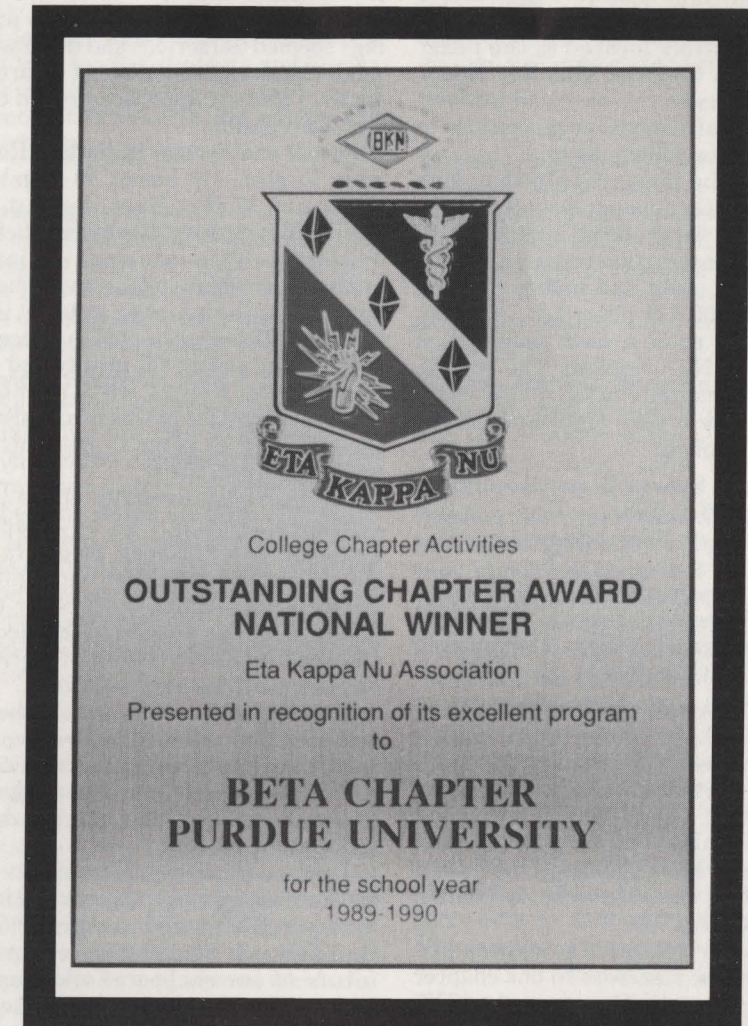
During Options Night, six demonstrations are performed in the electrical engineering building. Each of these demonstrations represents one of the six options in electrical engineering

offered at Michigan Tech. Each demonstration lasts approximately ten minutes and is performed by a faculty member.

Being an annual event, the project went over very well and will be done again next fall.

HKN/IEEE Tour: New; 32 hours; 7 members; Chairman Kathleen Muhonen—Beta Gamma, along with IEEE, put on a tour sponsored by GE. This tour took place at the Marquette General Hospital in Marquette, Michigan. During this tour, EE students and faculty were allowed to observe and learn about the Microwave Resonance Scanner, one of the newest facilities at the hospital.

A total of thirty-six students and two faculty members attended. All of the students were pleased with the tour, and Beta Gamma intends to participate in events like this again.



Winter Carnival: Recurring; 77 hours; 12 members; Chairman Michael Collins; Winter Semester— Winter Carnival is a weekend event dedicated to celebrate the snow and winter season since Tech is appropriately located in the heart of the Snow Country. Blue Key Honor Society sponsors this weekend festivity that allows all campus organizations to participate in many events.

Among the many events that took place, Beta Gamma participated in the one-nighter snow statue building competition. Construction began at 4:00 on Wednesday night and had to be completed by 8:00 AM Thursday. This year, our chapter made a snow sculpture of Eta Kappa Nu's emblem, The Bridge. With our chapter's efforts, this event proved to be a very enjoyable part of Winter Carnival.

Intramural Sports Team: Recurring; 70 hours; 10 members; Team Captain Tom Depottey; Spring Semester— This year during spring term, Beta Gamma formed an intramural volleyball team. Although we didn't make it to the tournaments, all members thoroughly enjoyed participating in the games.

Beta Gamma's purpose for participating in these campus activities is two-fold. One is to provide our members an organization to be affiliated with during these special activities. These are times when they can put aside their studies and the stresses of engineering classes and enjoy another facet of college life.

The other reason is to expose prospective new members to our chapter. Through our activities, we endeavor to reflect Beta Gamma as a serious and respected organization, while believing that a rounded individual must include social graces and recreational opportunities in their lives.

CHAPTER ACTIVITIES

Smokers: Recurring; 18 hours; 5 members; Chairman Richard Verellen; Winter and Spring Semesters— Smokers for interested students are scheduled for the beginning of winter and spring terms. Letters of introduction and invitation are sent to students who satisfy the scholastic requirements of HKN.

The first smoker was held at Tech's bowling lanes. There were two presentations given by the President and Vice-President of HKN to inform students of special topics about HKN. This provided the opportunity for the students and members to meet each other and perhaps bowl a few games together. The second smoker was used to inform students of pledge activities.

The purpose of having our first smoker at the bowling alley was to give students their first impression of HKN in a relaxed atmosphere. At previous smokers, members noticed the meetings seemed too serious and tense which might hinder the number of future initiates. This new approach proved to be very successful.

Informal and Formal Initiation: Recurring; Winter, 110 hours, 18 members, Chairman Walter Hart; Spring, 157 hours, 26 members, Chairman Richard Verellen— This informal initiation starts approximately four weeks before the night of the initiation exam. It is the responsibility of each pledge to acquire the signature of all EE faculty and staff members as well as HKN members. The main purpose of this is to insist the pledge make an effort to meet his/her instructors and peers.

On Thursday evening, there is an entrance exam put on by a faculty member. Friday evening, members help set up several labs that each initiate must perform along with other challenges members present to the pledges. Informal initiation is a lot of work but has proven to be very enjoyable.

Saturday afternoon we hold the formal initiation. All pledges are required and members encouraged to attend. Also, a plaque made by the pledge for one of the graduating seniors is due at this ceremony.

This ceremony is an important time for our chapter. All the goals and ideals for which HKN stands are presented to the pledges, who are in reality, the future of our chapter. Following the ceremony, a formal greeting is extended to the new members. Refreshments are provided. Altogether, 11 new members were initiated in the fall and 18 new members were initiated in the spring.

Spring Banquet: Recurring; 17 hours; 9 members; Chairman Donald Sherman; Spring Semester— As the final event of each school year, Beta Gamma sponsors a spring banquet inviting all members and electrical engineering faculty and staff. This becomes a special opportunity for students and faculty to become better acquainted in a relaxed atmosphere.

The banquet included a cocktail hour and a buffet style dinner followed by a dance. After dinner a traditional award, presented annually, was bestowed upon Professor Paul Lewis. He was elected by the electrical engineering student body as 1990 Electrical Engineering Professor of the Year. Twenty faculty members and thirty HKN members attended which was a very respectable showing.

Business Meetings: Regularly scheduled meetings were held approximately

twice a month. Extra meetings were called as necessary to attend to special activities. The committee chairmen also held committee meetings as needed.

SERVICES

Tutoring: Recurring; 66 hours; 15 members; Chairman Deborah Metz— Beta Gamma offers tutoring once a week for approximately two hours. This tutoring covers all EE classes offered, including classes for non-majors.

This year we set up special tutoring sessions the night before all circuit exams. Since these classes are required for all students, we felt tutoring would be most beneficial if offered in this way.

FUND RAISING

Coffee: Continued; 250 hours; 20 members; Chairman Rachel Becker— As a service and fund raising project, Beta Gamma supplied coffee in the library of the EE building. Members were responsible for maintaining the service. Proceeds were turned over to the chapter treasurer to purchase supplies as needed.

T-shirt Sale: New; 35 hours; 6 members; Chairman Dave Gold— As a new fund raising project, Beta Gamma put on a T-shirt sale. The shirt logo related to electrical engineering at Michigan Tech although the detail and art work are not presented here. The sale had an excellent response. All proceeds were turned over to the chapter treasurer for future use of the chapter.

1989-90 OFFICERS

Fall Officers

President: Michael Collins
Vice-President: Walter Hart
Treasurer: Mary Gregorius
Recording Secretary: Gary Turchan
Corresponding Secretary: Mike Davis
Bridge Secretary: Michael Rosseau
Library Chair: Steve Miller

New Officers Elected— Winter Term

President: Kathleen Muhonen
Vice-President: Richard Verellen
Treasurer: Dwight Parkinson
Recording Secretary: Rob Navaroli
Corresponding Secretary: Joseph Demler
Bridge Secretary: Paul Hovanec

CONCLUDING REMARKS

The preceding report was written by the Beta Gamma President, Kathleen Muhonen. Minor details have been omitted and some approximations were made due to taking office in the latter part of the school year.

Annual Report Beta Lambda Chapter Virginia Polytech

Officers and Data

FALL 1989

President: Truls Henriksen
Vice-President: Eric Miller
Recording Secretary: Kurt Schaubach
Corresponding Secretary: Philip Clayton
Treasurer: Steve Fredrick
SEC Representative: Mike Colbert
SEC Representative: Andy Erler
Historian: Ron Colangelo
Faculty Advisor: Dr. W. J. Baumann

No. of Members: Approx. 40
No. of New Initiates: 55
No. of Business Meetings: 6

SPRING 1990

President: Truls Henriksen
Vice-President: Eric Miller
Recording Secretary: Kurt Schaubach
Corresponding Secretary: Philip Clayton
Treasurer: Steve Fredrick
SEC Representative: Mike Colbert
SEC Representative: Andy Erler
Historian: Ron Colangelo
Faculty Advisor: Dr. W. J. Baumann

No. of Members: Approx. 60
No. of New Initiates: 22
No. of Business Meetings: 5

PROGRAMS AND ACTIVITIES

Expo '89: Recurring; 25 hours; Fall Semester— Expo is an industrial exposition sponsored by the Student Engineers' Council. Eta Kappa Nu manned an information table.

Coffee and Doughnut Hours: Recurring; 16 hours; Fall and Spring Semesters— Eta Kappa Nu organized informal faculty/student Coffee and Doughnut Hours in the mornings held in the student lounge. This event proved to be a good way for the students and faculty to interact informally and also to promote the association within the department.

Class Registration: Recurring; 48 hours; Fall and Spring Semesters— Eta Kappa Nu mans the registration table in the EE office during class registration week to distribute registration material and to provide assistance to students.

Tutoring: Recurring; 100+ hours; Fall and Spring Semesters— Eta Kappa Nu provides free tutoring upon request to students in the Electrical Engineering program and also to students in other engineering fields needing assistance with the electrical engineering requirements of their particular field. Students are referred to the Tutoring Chairman either directly through the association publicity or through the undergraduate advisor.

Career Forum: New; 120 hours; Fall Semester— In order to be a service organization to the student as well as to the department, Eta Kappa Nu organized a two day forum. Day one consisted of one speaker addressing interviewing, resume writing, and professional behavior specifically for Electrical Engineers. The second day was the most successful. On that day four professionals formed a panel which discussed career options for Electrical Engineers. One speaker addressed the question of pursuing advanced degrees in business fields. Another presented the naval programs for EE's. A third was a practicing Electrical Engineer and also a graduate student in our field. The last panel member was the Dean of the College of Engineering. He gave general advice; however, he advocated the benefits of pursuing careers in academics. This event is strongly recommended for further development.

New Member Initiation: Recurring; 20 hours; Fall and Spring Semesters— Officers of the association arranged the selection of new members, and conducted the traditional initiation of the new members into Eta Kappa Nu. The event included the initiation ritual, dinner, after-dinner advice and interaction with the department administration.

Technical Elective Forum: Recurring; 10 hours; Spring Semester— Eta Kappa Nu along with the student chapters of IEEE and ISHM arranges for professors from each specialty group within

the department to make a short presentation to the Electrical Engineering juniors describing the senior courses available within each specialty. This event serves to inform students prior to selection of senior courses about the diversity of options within the department.

Engineering Open House: Recurring; 20 hours; Spring Semester— This event was organized on the college level by Tau Beta Pi. HKN, IEEE, and ISHM cooperated in presenting the department, staffing labs and providing tour guides for special tours within the EE department.

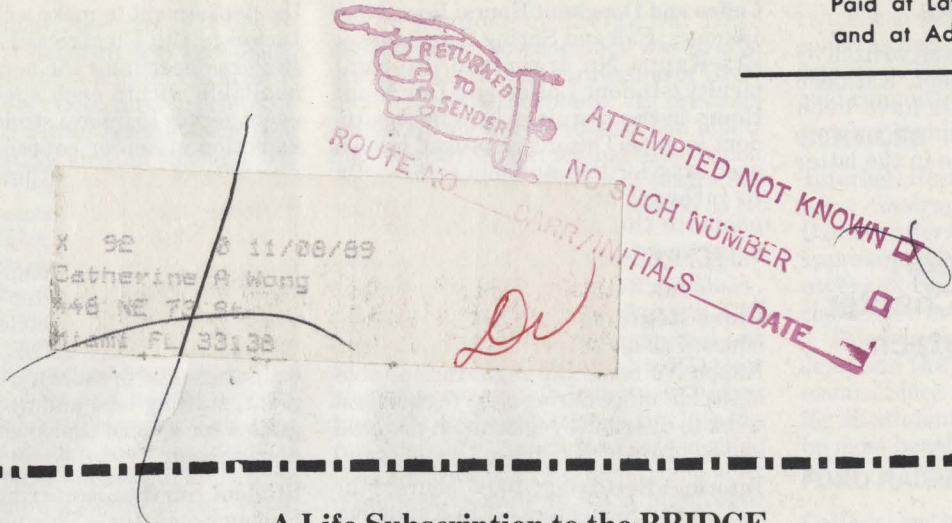
Student Survey: Recurring; 70 hours; Spring Semester— This year's survey and the administration of the survey was altered significantly. The purpose of the survey is to tap the students for information about schedules, classes, textbooks, software, and general feelings about the program. The survey targets juniors and seniors in the Electrical Engineering program. This spring a new survey was designed in cooperation with the faculty, administration, and students. Also, the survey was administered late in the spring semester, allowing students to have experienced their respective years prior to being questioned about them; furthermore, the surveys were filled out in the beginning of a class period as allowed by the instructor. These changes resulted in a large number responding to the survey. The results were tabulated and are currently being analyzed by the department.

Happy Hours: Recurring; 20 hours; Fall and Spring Semesters— The association sponsored happy hours in members' apartments. The events were open to all department students, faculty, and staff.

Teaching Awards: Recurring; 5 hours; Spring Semester— Eta Kappa Nu presents two awards to department professors each year— the White Hat Award, given to the professor who expresses the most concern for the students' understanding of the material and also for the students' general well being. The Outstanding Teacher Award is given to the top rated professor/instructor. Both awards include a plaque and a dinner at a local restaurant.

EE Spring Picnic: Recurring; 40+ hours; Spring Semester— HKN, IEEE, and ISHM co-sponsor the annual spring picnic. This year, as in the past, the event was held at a faculty member's farm. Food and entertainment were provided by all three organizations.

Truls Henriksen, Chapter President



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