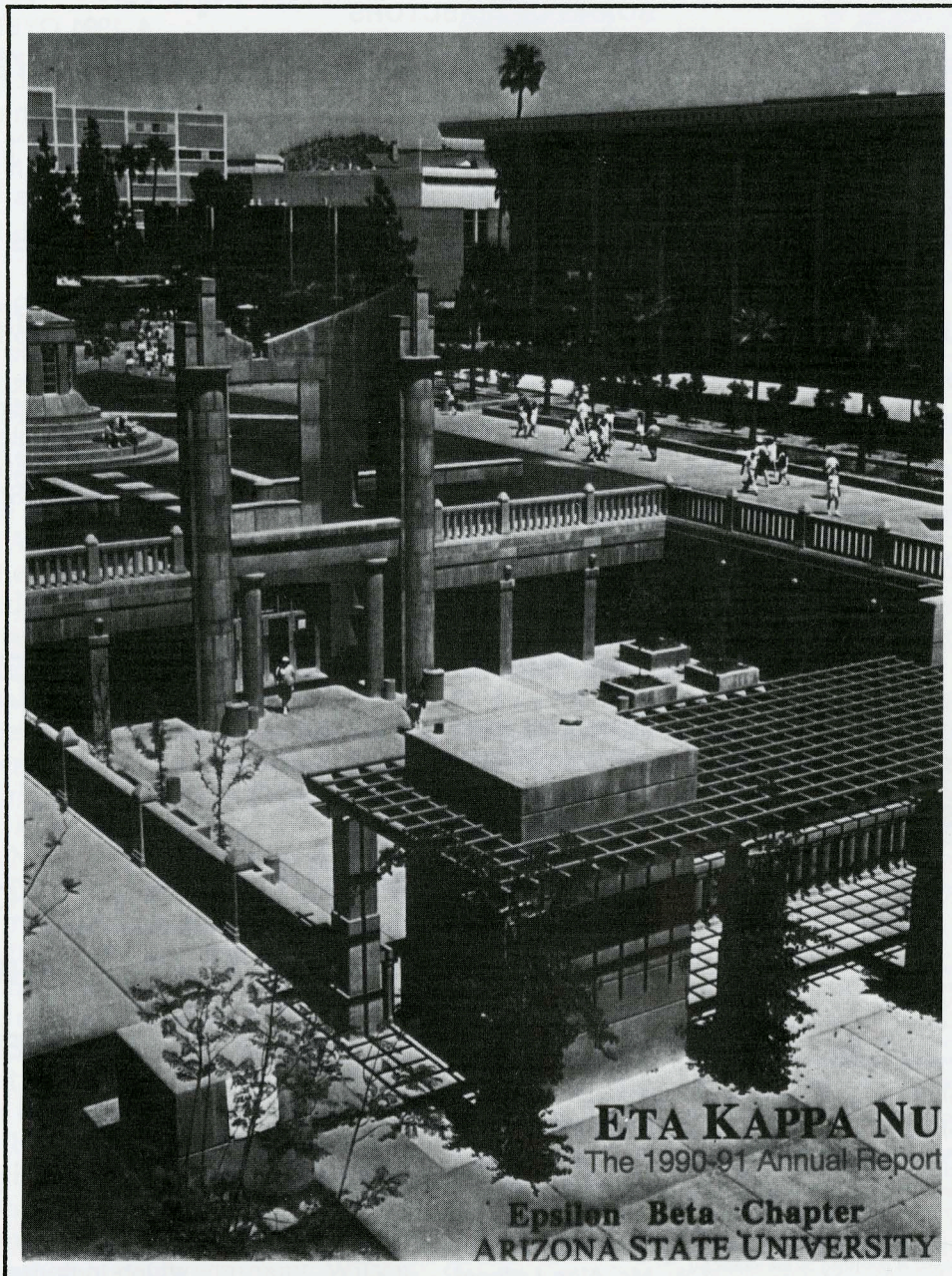


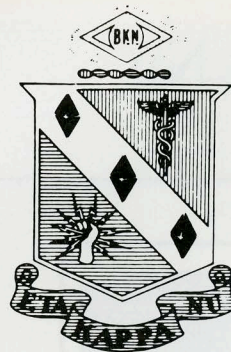
# BRIDGE of Eta Kappa Nu



Arizona State's Honorable Mention Winning Report  
See Page 12



At Left: BRIDGE learned at press time that HKN Eminent Member and IEEE Award Winning Author, Larry Dwon (Worthwhile Goals), is recovering from a stroke. Expressions of encouragement may be sent to 6608 Orchard Knoll Drive; Apex, NC 27502. Phone: 919-362-9387.



**Editor and Business Manager**  
**J. Robert Betten**

**August 1992**

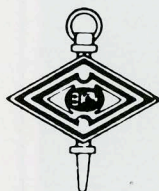
**Vol 88—No. 4**

**Contributing Editors**

**Alan Lefkow**

**Ralph J. Preiss**

**Berthold Sheffield**



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## Contents

### Feature Articles

**4** 1991 OYEE Banquet  
New Brunswick, N.J.

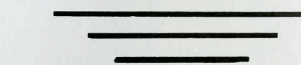
### Announcements

**8** New HKN Officers and Directors

### Awards

**3** Wilson Greatbatch Wins First Karapetoff Eminent Members' Award

**12** Outstanding Chapter Activities Honorable Mention Award—Winner Epsilon Beta at Arizona State



## NOTICE

## THE HKN

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# Wilson Greatbatch is First Vladimir Karapetoff Eminent Members' Award Winner

by Bert Sheffield

Dr. Wilson Greatbatch, the inventor of the implantable cardiac pacemaker, in use worldwide, received the Vladimir Karapetoff Eminent Members' Award which includes a citation plus an honorarium. The Award was made in connection with a ceremony honoring the Outstanding Young Electrical Engineer at the Hyatt Regency Hotel in New Brunswick, NJ, on April 27, 1992.

The award winner, Dr. Wilson Greatbatch, is President and Board Chairman of Greatbatch Gen-Aid, Ltd., in Clarence, New York. He is the holder of many U.S. and foreign patents in addition to his patent of the medical cardiac pacemaker (U.S. Patent No. 3 057 356, granted in 1962). He contributed many articles to scientific journals, and is the author of the book *Implantable Active Devices*, published by Greatbatch Enterprises Inc., in 1983.

Born in Buffalo, New York, September 6, 1919, he earned his BEE Degree from Cornell University in 1950, his MSEE from the University of Buffalo in 1957, and received four honorary degrees of Sc.D., from Houghton College (1971), SUNY at Buffalo (1984), Clarkson University (1987), and Roberts Wesleyan College (1987).

Since his graduation from Cornell he served as Project Engineer at Cornell Aeronautical Laboratories, from 1950 to 1952; as Assistant Professor of Electrical Engineering at the University of Buffalo, from 1952 to 1957; and as Manager, Electronics Division, Taber Instrument Corporation, from 1957 to 1960. In 1961, he formed his own company, Wilson Greatbatch, Inc., to license the implantable pacemaker, the principal licensee of which was Medtronic. Since the inception of implantable pacemakers, Medtronic has marketed about 1.5 million of these units.

Since 1961, Dr. Greatbatch served his own organization in various capacities, and since 1986, he has been President of Greatbatch Gen-Aid, Ltd., a research corporation providing genetic engineering assistance in medical and agricultural areas.



Concurrently, he has been serving as adjunct professor at Houghton College since 1970, at SUNY at Buffalo since 1981, and at Cornell University since 1987.

Dr. Greatbatch received many awards and honors. He is a member of Sigma Xi, a Fellow of the Institute of Electrical and Electronic Engineers, and a Fellow of the American College of Cardiology—one of only two non-M.D. engineers ever to be so honored. He is also a Fellow of the British Society of Health. In addition, in 1986, he was inducted into the National Inventors' Hall of Fame, one of 63 holders of U.S. Patents who have been so honored. In 1988, he was elected to the National Academy of Engineering. In 1990, President Bush awarded him the National Medal of Technology for his invention of the implantable pacemaker and the power sources for pacemakers.

Dr. Greatbatch and his wife Eleanor have five children and six grandchildren. They live in Clarence, a suburb of Buffalo, New York.

Nominations for the 1993 Vladimir Karapetoff Eminent Members' Award are being solicited until December 31, 1992. Nominations arriving after that date may be considered for next year. Nomination forms and guidelines may be obtained from Donald Christiansen, 434-A West Main Street, Huntington, N.Y. 11743.

The Karapetoff Eminent Members' Award recognizes an outstanding electrical engineering practitioner and memorializes the multifaceted Dr. Vladimir Karapetoff of Cornell University, who died in 1948. In addition to the recognition, a monetary award is provided to the recipient. Dr. Karapetoff was an exceptionally gifted engineering professor at Cornell University, a prolific inventor, author of several texts that set new standards in his time, and a musician and lecturer.

# OYEE AWARD DINNER

by Ralph Preiss

Vice Chairman Award Organization Committee

On Monday evening, April 27, 1992, more than 120 friends and members of Eta Kappa Nu greeted the awardees at the Hyatt Regency Hotel in New Brunswick, New Jersey. This was a very special evening, not only because it was the fifty-sixth presentation of the Outstanding Young Electrical Engineer awards, but also because this marked the first presentation of the Vladimir Karapetoff Eminent Members' Award. For the first time, the Eta Kappa Nu Association was recognizing both the outstanding young electrical engineers, less than ten years beyond their baccalaureate degree, and also an older, accomplished electrical engineer "who has distinguished himself/herself through an invention, a development, or a discovery in the field of electro-technology (that is used in the service of mankind)."

It was 6:00 PM when the din of the bustle on the mezzanine of the hotel grew louder as the guests and awardees arrived. The Board of Directors had met earlier in the hotel, and the members came down from their rooms to participate in some socializing. Among them were John Spare, B. J. Ball, Laureen Parker, the Vice President, and both David Stephenson and Bruce Johnson. They were able to pick up their name tags and leisurely look at the bowls and certificates which would be awarded later that evening. These were prominently exhibited at the registration table which was managed by Mrs. Fern Katronetsky, a key member of that evening's banquet committee. Mingling around the registration table were Bob Betten, Eta Kappa Nu Executive Secretary, and members of the Award Organization Committee (AOC) some of whom were assigned to host the awardees and to assist with their needs before the banquet commenced. Among these were Jim Hebson, Bob Bartolini, and Bert Sheffield.

One person, Michael Hajny, the 1991 AOC Chair, was not present. I have enjoyed seeing Michael at all the OYEE award banquets I can remember, at least in the past ten years, since he usually served on, or headed the Banquet Committee. Unfortunately, he had to miss this year's event. Many asked for him, but Michael had been on a number of business trips abroad, and had told the AOC in January that he might not make it to the banquet. Sure enough, he was not there! Another person whom we missed this year, was our volunteer banquet photographer,

Howard Sheppard, whose pictures of many previous banquets have been featured in the *Bridge*. Since an illness prevented his attendance, the task of photographing this event fell into my hands.

Looking around, I noticed Jim D'Arcy, the president of the association. He was busily making sure that the sound system in the banquet room was set just right before he would join in the socializing. Don Christiansen, Chair of the Eminent Members' Award Committee, was throwing glances at the mezzanine staircase to see whether Wilson Greatbatch, the first Karapetoff awardee, was approaching so that Don could greet him. I saw Quayne Gennaro, a member of the AOC and the evening's M/C, who was talking to the finalists, Gail Lalk of Bellcore, and Steve Tomashot of IBM.

By now, the reception area was filled with celebrities and guests. Constance Chang-Hasnain, the 1991 OYEE winner arrived, followed by members of her family, friends, and well-wishers from Bellcore. Also, there were: Bradley Rubin, 1991 Honorable Mention, and his wife, together with Alan Larson from IBM Rochester, Minnesota; Francis Gaffney, another 1991 Honorable Mention, from the Boston Edison Company; and Dr. Hung Le, also Honorable Mention, together with Ralph Nelson from IBM Mannasas. There was Merrill Buckley, Jr., 1992 IEEE President, who was going to speak at the banquet, and also John Rittenhouse, Senior Vice President for Technology Programs at the General Electric Company, who was to deliver the keynote address. Others that I briefly met were Sol Triebwasser, host of one of the IBM tables; and Eric Herz, IEEE General Manager; and Irv Engelson, IEEE Director of Technical Activities, member of the AOC, and chair of this year's Banquet Committee.

There were also Cecelia Jankowski, the 1990 OYEE; George Heilmeyer, the 1968 OYEE; Mark Adamiak, the 1985 OYEE; Jesse Russell, the 1980 OYEE; Harold Hoeschen, a 1985 Honorable Mention; and Stanley Yuen, the 1989 OYEE. It was really inspiring to see them all return to congratulate the new awardees. And there were Drs. S. S. Rao of Villanova University and James Carnes of the David Sarnoff Research Center, both of whom served on the 1991 Jury of Award.



Merrill Buckley



John Rittenhouse



Donald Christiansen



Finalist Gail Lalk with President D'Arcy



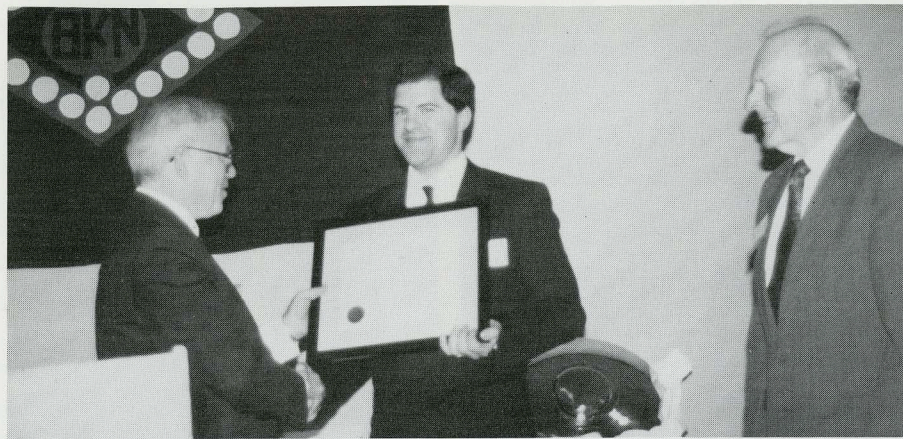
James D'Arcy and Finalist Steven Tomashot

The clock struck 7:00 PM, and we all proceeded into the banquet room, where Quayne Gennaro called the banquet to order. Jim D'Arcy welcomed all on behalf of Eta Kappa Nu. The dishes clanged, and a hearty meal was had by all. Then, once again, while the coffee was being served, Quayne called the festivities to order and Merrill Buckley spoke on the need for better education to face the future and keep this country technologically competitive. This was followed by the keynote address of John Rittenhouse, who also discussed some of the more important issues facing society in the future, such as the level of

education. He concluded that the young engineers "such as are gathered in this room," must help resolve these issues.

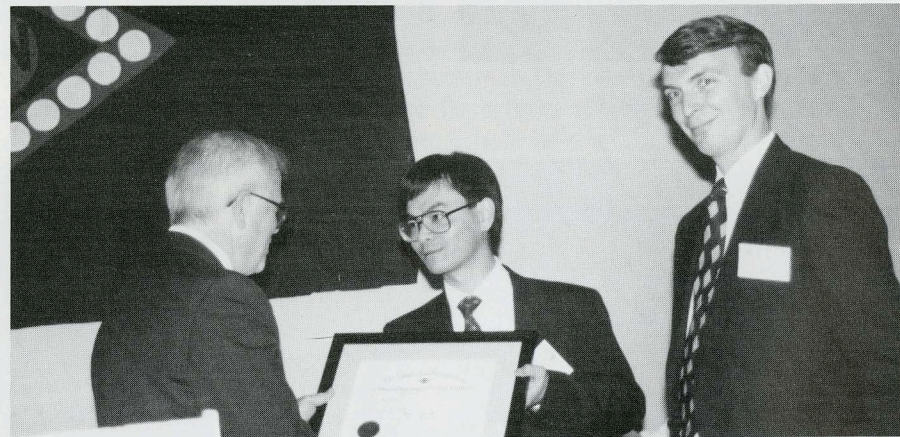
Don Christiansen then discussed the new Vladimir Karapetoff Eminent Members' Award and presented John Nation, who in turn, introduced Dr. Wilson Greatbatch, the first award recipient. Dr. Greatbatch was cited for his work on, and invention of, the implantable cardiac pacemaker. [EDITOR'S NOTE: See Karapetoff Award article in this issue.]

Jim D'Arcy then presented the 1991 Finalists, Gail Lalk and Steven Tomashot, with their certifi-



President D'Arcy presents Honorable Mention Certificate to Francis Gaffney accompanied by C. B. Damrell

Hung Le receives Honorable Mention Certificate from President D'Arcy as Ralph Nelson observes



Bradley Rubin accepts Honorable Mention Certificate from James A. D'Arcy with Alan Larson

cates. Thereafter, the nominators of the 1991 Honorable Mentions were called to the podium. C. B. Damrell of the Boston Edison Company, introduced Francis Gaffney, who in his response was very pleased and happy to find himself being recognized for work which he "loves to do and has fun doing." Ralph Nelson of IBM Manassas, Virginia, introduced Hung Le, who in his response thanked the United States for the opportunity it gave him to study and do well—something he could never have achieved in his native land. Finally, Alan Larson of IBM Rochester, Minnesota, introduced Bradley

Rubin, who, in his response, explained how far the computer industry has gone from his high-school graduation to the present time, as illustrated by quotes from BYTE Magazine, which he has been collecting since then. Each of the honorable mentions received an Eta Kappa Nu certificate from Jim D'Arcy.

This was followed by the presentation of awards to the Eta Kappa Nu 1991 Outstanding Young Electrical Engineer, Dr. Constance Chang-Hasnain. She was introduced by Robert Leheny of Bell Communications Research (Bellcore), and received the bowl

Constance Chang-Hasnain introduced by Robert F. Leheny receives Commemorative Bowl from President D'Arcy



President James D'Arcy presents Winner's Certificate to Constance Chang-Hasnain as Robert F. Leheny observes

IEEE President Merrill Buckley shows Constance Chang-Hasnain the position of her name on Master Commemorative Bowl with all OYEE Winner names

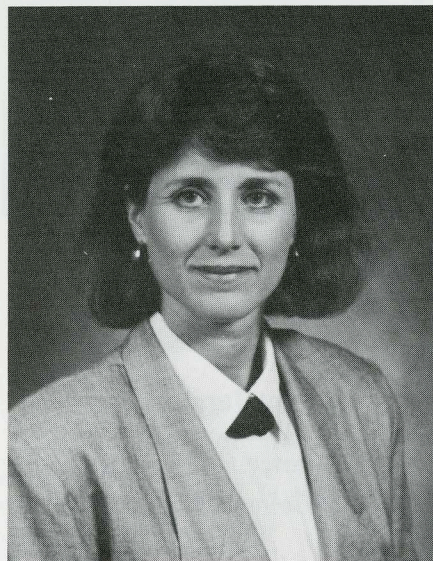


and certificate from Jim D'Arcy. In addition, she was shown her name which was inscribed on the "large" Eta Kappa Nu bowl, together with those of the fifty-five previous recipients. The large bowl was held securely by IEEE President Buckley. It is kept on the 10th floor of IEEE Headquarters in New York, where it is part of a permanent display. Just as she was about to respond, Jim D'Arcy pulled a letter from an envelope labeled "The White House, Washington, DC." He then read a greeting to Eta Kappa Nu and a congratulatory note to Constance Chang-Hasnain from the President of the United

States, with warm wishes also "from Barbara." This came as a real surprise and highlight of the ceremony as the 1991 OYEE accepted the presidential message. In her response, Dr. Chang-Hasnain thanked her adopted country for the opportunities it opened up to her, and expressed hope that by her work and contributions she could pay back the debt she feels she owes.

At exactly 10:00 PM, Quayne Gennaro announced the end of the banquet; but many lingered on to congratulate the winners and to wish each other a safe journey home.

# NEW OFFICERS AND DIRECTORS



**Lauren H. Parker**  
President

Lauren Houghtaling Parker was born in Miami, Florida in 1951. She currently resides in Austin, Texas with her husband, Glenn, and their two children.

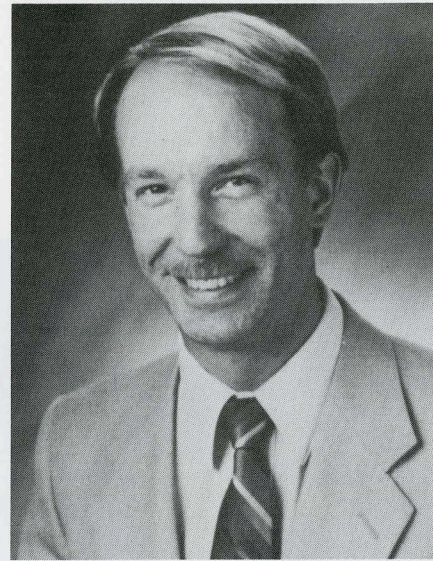
After graduating from high school in Miami, Lauren attended Ambassador College in Pasadena, California where she majored in Home Economics. As an undergraduate she was a key punch operator for the college and then worked as a computer operator through 1976. In 1978 she moved to Connecticut where she was the administrative assistant to the General Manager of Finance at Continental Can's corporate headquarters in Stamford. During 1979 and 1980, she was the executive secretary for the Vice-President of Finance at Tracor Aerospace in Austin, Texas.

Lauren returned to college in 1980, at the University of Texas in Austin where she received her Baccalaureate Degree in Electrical Engineering with highest honors.

After graduation, she was active in founding the Lone Star Alumni Chapter of Eta Kappa Nu and served as president during 1984-1986. When the Norman R. Carson Outstanding Junior Award was initiated, she served as chairperson for the administrative and award committee (1985-1987), a position in which she has served again since spring 1990. She has been a member of the committee since its inception. In addition, Lauren served as a member of the Board of Directors of Eta Kappa Nu for fiscal years 1986-87 and 1987-88. She is also a member of Tau Beta Pi and IEEE.

During the summers as an engineering undergraduate, Lauren built test and prototype equipment for Tracor Aerospace as an electronic technician. After graduation, she worked for Advanced Micro Devices as a product engineer where she developed an automated test lab set-up for a 1200 baud modem chip (1984-1986), and then returned once again to the University of Texas for graduate work. As a research assistant for the Microelectronics Research Laboratory at the University, she analyzed the feasibility of ferroelectric materials for the capacitor dielectric in 64- and 256-Mbit dynamic random access memories. In addition, she was responsible for the purchase of LPCVD and RIE wafer processing equipment for a new microelectronic fabrication lab. She received her Master's Degree in Electrical Engineering in 1988.

Lauren continued her research on ferroelectric materials at the University of Texas until she joined Motorola Inc., Austin, Texas, as a member of the Advanced Product and Research Lab. She is currently working on the development of an integrated fabrication process for a 4-Mbit CMOS fast static random access memory (SRAM) chip. Her areas of interest include process integration, submicron device design, and device isolation.



**David G. Meyer**  
Vice-President

David George Meyer received the B.S. degree in electrical engineering in 1973, the M.S.E. degree in electrical engineering in 1975, the M.S. degree in computer science in 1979, and the Ph.D. degree in electrical engineering in 1981, all from Purdue University, West Lafayette, Indiana. In 1982, he joined the School of Electrical Engineering at Purdue University, where he is currently an associate professor specializing in advanced architecture microprocessors, computer architecture, acoustics, digital signal processing, parallel processing computer systems, VLSI design, and educational delivery systems.

Dr. Meyer is a member of the Institute of Electrical and Electronics Engineers (IEEE) professional society, the Audio Engineering Society (AES), the Association of Computing Machinery (ACM), and the American Society for Engineering Education (ASEE). He is also a member of the Eta Kappa Nu electrical engineering honorary society and the Tau Beta Pi engineering

honorary society. He has served as a faculty advisor for the local student chapters of both HKN and IEEE.

Dr. Meyer has developed two new courses in the computer engineering area: a graduate course on advanced architecture microprocessors, and a senior-level lecture lab course on embedded microcontrollers. In addition, he has completely revised the introductory lecture/lab course on microprocessors and made major contributions to the introductory lecture/lab course on logic design.

Dr. Meyer has won teaching awards in 1984, 1985, 1986, 1987 and 1992. In 1987 he was the national recipient of the Eta Kappa Nu C. Holmes MacDonald Outstanding Teaching Award. In 1986, he was one of 11 national recipients of Digital Equipment Corporation's "Incentives for Excellence" Award. This award has allowed Dr. Meyer the opportunity to improve laboratory facilities and to experiment with interactive laser videodisc instructional delivery systems.

Dr. Meyer has published two research book chapters, seven journal articles, twenty-nine conference papers, and nine technical reports since his appointment to a tenure track position in 1983. Dr. Meyer has received research grants from IBM for studies in parallel/distributed computing, from the Indiana Corporation for Science and Technology for development of advanced robot control hardware and software, and from Digital Equipment Corporation for the development of computer-aided educational delivery systems. He has been the Principal Investigator or Co-Principal Investigator on numerous research contracts, and he has received valuable equipment grants for curriculum development.

The need to adapt presentation of course material to students with different backgrounds and abilities and the need to teach in the "visual arena" have motivated Dr. Meyer to push for use of "multimedia" in education. Three years of equipment funding from Digital Equipment Corporation followed by three years of Creative Undergraduate Instruction Project funding from the Dean of Engineering have facilitated the

creation of a cost-effective testbed system for multimedia instructional delivery at Purdue's School of Electrical Engineering. This testbed system, called the "Videojockey Multimedia Delivery System" (VMDS), provides electronic delivery of multimedia instructional materials to various classrooms, and provides students *outside of class* with *selectable access* to the same multimedia instructional materials used during lecture—e.g., still frames or motion segments stored on laser videodisc, videotaped demonstrations, "electronic field trips," etc. Remote access to the database of multimedia materials is provided using an existing in-house closed circuit cable-TV network coupled with the Engineering Computer Network (ECN).

VMDS distributes multiple channels of video sources to individual laboratory workstations as well as various lecture and computer terminal rooms. One of the ECN lab host computers supports a user interface that: (1) provides a menu of still frames and videotaped segments currently available, (2) schedules the frame/segment for "broadcast" over the in-house cable TV network, and (3) autolocates the videodisc and videotape playback units to find the selected frames and/or segments. A text window is available that can either provide additional "annotation" (e.g., textual explanation of material appearing on a "lecture presentation" frame) or help/see-also information. Via VMDS, students are able to access visual still frames and videotaped segments presented in lecture outside of class, from a variety of locations.

The Videojockey Multimedia Delivery System, described above, has grown out of an earlier instructional innovation developed by Dr. Meyer: the "Lecture-Workbook," a skeleton set of notes with *carefully chosen* sections left to be completed in class. The structure and organization of the Lecture-Workbook is based on studies that show notetaking transcends mere archival utility: significant learning can occur during lecture due to the *active encoding* of information that notetaking facilitates. The Lecture-Workbook helps focus classtime attention on mate-

rial that has the greatest potential for elucidating important concepts while minimizing the amount of classtime spent on peripheral details. Not only is classtime efficiency maximized, but also there is greater opportunity for interaction and discussion, thanks to a more relaxed atmosphere.

Finally, use of a Lecture-Workbook facilitates a structured lecture-by-lecture course outline, providing high consistency in the course content from semester-to-semester regardless of who is teaching the course. Dr. Meyer has developed complete Lecture-Workbooks for EE 266 *Digital Logic Design* (used from 1980-1985) and EE 362 *Microprocessor Systems and Interfacing* (used from 1982-present). He is currently developing similar materials for EE 477 *Embedded Microcontroller Senior Project* and EE 566 *CISC Microprocessor System Design*. He is also co-authoring, with Harold S. Stone, a textbook covering the EE 362 and EE 477 course material: *Microprocessor Systems and Interfacing* (Addison-Wesley), to appear in 1993.

Another noteworthy innovation pioneered by Dr. Meyer is a computerized grading/course management system that provides students, via E-mail, with their exact class standing along with a projected grade at various times throughout the semester. Development of this system has been motivated by the desire to let students know *exactly* where they stand following each exam, while at the same time respecting their privacy (by not posting scores and/or projected grades publicly). The grading algorithm developed and refined over the past ten years has proven to be very fair, reliable, and stable. An accompanying set of utility programs provide the instructor with a wide range of statistical information as well as course support services (e.g., grade entry sheets, office hour log sheets, etc.) Dr. Meyer has used this system in all the courses he teaches and has made it available to other professors as well.

Dr. Meyer lives in West Lafayette, Indiana with his wife, Marsha, and son, Corben, who was born in November, 1989.



**Dennis W. Leitnerman**  
Director

Dennis W. Leitnerman is an OEM Account Manager with the Hewlett-Packard Company in Sunnyvale, California. He was born in St. Louis, Missouri on 11 April 1953. He graduated from Crystal City [Missouri] High School as class valedictorian. He received his B.S.E.E. and M.S.E.E. degrees from the University of Missouri-Rolla (UMR) in 1976 and 1977, respectively.

During his undergraduate program, he participated in the Cooperative Engineering Training Program. He was a co-op student with the City of St. Louis-Architecture/Engineering Design Division, and Sverdrup & Parcel and Associates, Inc. He performed electrical engineering design and drafting for construction projects.

He is a member of Eta Kappa Nu, Tau Beta Pi, Phi Kappa Phi, IEEE, NSPE, and ACM. He is a registered Professional Engineer in California.

He joined the Hewlett-Packard Company, Data Systems Division [Cupertino, CA] in 1977 as a Hardware Support Engineer. He was responsible for HP1000 Computer datacomm hardware interfaces, datacomm firmware, HP-IB, general I/O, and site preparation.

In 1979, he became a Software Support Engineer for computer networking products. He developed support plans, demonstrations, and

HP Systems Engineer (SE) and customer training for the internal operation of HP1000 Computer networking products. He delivered SE/customer training and consulting world-wide.

In 1982, he became a Support Engineering Manager for HP Network Services and LAN products at the HP Information Networks Division. He led a team of support engineers responsible for HP-to-HP communications products on HP3000 and HP1000 Computer Systems. This team performed supportability engineering, developed/delivered training for the HP Application and Customer Engineering Organizations, supported beta sites, and backed-up On-Line Support Engineering.

In 1985, he became a Network Consultant in the Network Project Center at the HP Information Networks Group. He leveraged large deals for HP through delivery of network consulting services, pioneered network consulting for technical systems, architected networking solutions for a major telecommunications carrier which opened new business opportunities for HP, and contributed to the formalization of Network Planning & Design.

In 1987, he became a Network Projects Manager in the Network Project Center. He led a team of Network Consultants who provided technical consulting, issue resolution, and commitment management for the networking portion of Strategic Business Deals. He developed the professional/technical skills of this team, he developed the HP Factory Process for Strategic Business Deals, and led the Network Design Tools Team.

In 1990, he transferred to the HP Santa Clara Information Systems Division in Santa Clara, CA. Shortly thereafter, the division was renamed the Cooperative Object Computing Division (CCD), and last year moved to Sunnyvale, CA. CCD is responsible for the R&D, marketing, and manufacturing of HP NewWave. NewWave is The Premier Desktop Manager for Windows. With NewWave, you can logically organize/integrate information, easily share and

access information, and automate repetitive tasks.

As an OEM Account Manager, Mr. Leitnerman's primary responsibility is to license NewWave to major computer companies in North America and Asia. He negotiates contracts and provides account management services to these customers which involves interacting effectively with all levels of management and coordinating efforts across multiple functional areas.

As a youth, he earned the following awards in the Boy Scouts: Order of the Arrow, God and Country Award, and Life Scout.

At UMR, he was very active in extracurricular activities. His services to Eta Kappa Nu at the Gamma Theta Chapter included serving as President, Vice-President, Recording Secretary, Corresponding Secretary, Pledge Committee Chm., EE Relations Committee Chm., and Science Fair Judge. The Gamma Theta Chapter received the Outstanding Chapter Award during the year he served as Chapter President. In 1976, he placed in the top 10 nationwide in the Eta Kappa Nu Outstanding Student Award Program.

His activities in the IEEE UMR Student Branch included serving as Chairman, Vice-Chairman, Secretary, Membership Committee Chm., and Program Committee Chm.

In Phi Eta Sigma [Freshman Honor Society], he served as President. In Tau Beta Pi, he served as Pledge Committee Chm. and Banquet Committee Chm. In Intercollegiate Knights [National Honorary Service Fraternity] Osage Chapter, he served as Treasurer. While at UMR, he was inducted into the Order of the Engineer. During co-op sessions, he was very active in the Engineers' Club of St. Louis serving as Professional Development Committee Chm. and Membership Committee member.

While at UMR, he received several scholarship awards, a graduate fellowship, the St. Louis Electrical Board of Trade Award in 1974, and was named to Who's Who Among Students in American Universities and Colleges in 1974.

During his fifteen years at the Hewlett-Packard Company, Mr. Leitnerman has continued to be very active in technical and professional societies.

In the IEEE, he is currently serving the third year of a four year appointment to the Wescon Board of Directors as an IEEE San Francisco Bay Area Council representative. Wescon is an international electronics conference and exhibition which annually alternates between San Francisco and Anaheim, with approximately 1,200 exhibitors and 35,000 attendees.

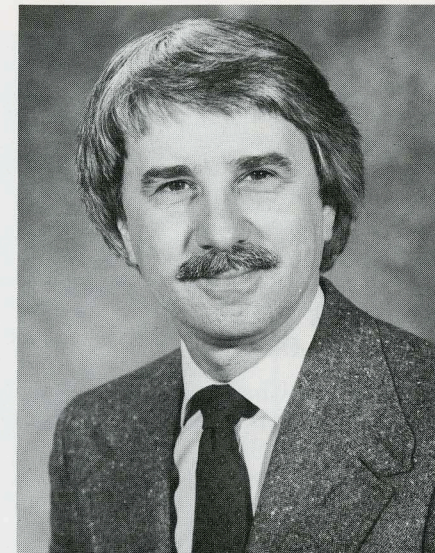
In 1986-87, he served as Finance Chairman for the IEEE San Francisco Bay Area Council. In 1985-86, he represented the IEEE Santa Clara Valley (SCV) Section on the IEEE San Francisco Bay Area Council. In the IEEE SCV Section, he served as chairman of various committees and in all offices including Section Chairman in 1984-85. In 1980-81, he served as Chairman of the IEEE Computer Society SCV Chapter. In 1984, he was awarded an IEEE Centennial Medal for outstanding service to the Institute.

In the National Society of Professional Engineers (NSPE), he is currently serving on the Executive Committee as NSPE Vice-President and Chairman of the Professional Engineers in Industry (PEI) practice division of NSPE. Prior to becoming Chairman of NSPE/PEI, he served as Chairman-Elect, Secretary, and Western Region Vice-Chairman. He is also a member of the Steinman Council.

In the California Society of Professional Engineers (CSPE), he served as CSPE/PEI Chairman (86-87). In 1986, he received CSPE's Young Engineer of the Year Award. In the CSPE Santa Clara Valley (SCV) Chapter, he served as chairman of various committees and in all offices including Chapter President in 1981-82.

His hobbies include photography, travel, electronic equipment and homeowner projects.

Dennis and his wife, Pam, live in Sunnyvale, CA with their two sons, Eric (7) and Craig (3).



**Robert A. Bartolini**  
Director

Robert A. Bartolini is Director, Integrated Circuit Research Laboratory at the David Sarnoff Research Center in Princeton, New Jersey. He received a BSEE (1964) from Villanova University, an MSEE (1966) from Case Western Reserve University, and a PhD (1972) from the University of Pennsylvania.

Dr. Bartolini joined the David Sarnoff Research Center (formerly RCA Laboratories), in 1966 and has made major technical contributions to the fields of optics and optoelectronics which have included among other things: *Holography*, which involved development of novel optical recording materials for relief-phase and volume-phase holograms; *Integrated-optics*, which involved development of materials for integrated optic devices; and *Optical Memory Applications*, which included development of materials and systems for high data rate and high density data storage applications using semiconductor diode lasers.

In 1983, he was appointed Head of the Laser Diode Systems Research Group which had the responsibility for the research and development of diode lasers and systems for optical memory and optical communication applications. In 1989, Dr. Bartolini assumed his current position as Director, Integrated Circuit Research Laboratory. This Laboratory has the responsibility for the design

and fabrication of advanced Integrated Circuits.

During his career, Dr. Bartolini has received three RCA Laboratories' Achievement Awards (1970, 1976, and 1980), been awarded 22 U.S. Patents, published or presented over 100 technical papers. His presentation of a paper on Optical Recording Structures received the Society for Information Display (SID) Outstanding Paper Award in 1979, and his patent on high performance Terlayer optical discs was selected as patent of the week in the New York Times (9/13/80). Dr. Bartolini's achievements on Optical Memory Systems have been highlighted on the PBS TV series "Innovations" (1983-84 season), and his achievements on Holographic system applications were selected as part of the Smithsonian Institute Exhibit commemorating the 25th anniversary of the development of the laser (1985). In 1984 he received an IEEE Centennial Medal awarded as part of the celebration of the 100th anniversary of the IEEE and in 1986 he received a Professional Achievement Award from Villanova University College of Engineering. Also in 1986, Dr. Bartolini was the recipient of RCA's highest technical honor, the David Sarnoff Award for the conception, understanding, and development of optical recording media.

Dr. Bartolini is a Fellow of both the IEEE and the Optical Society of America (OSA) and a member of Eta Kappa Nu, Tau Beta Pi, and Sigma Xi. For 1983-84, he was a Sigma Xi National Lecturer. Since 1988 he has been a member of the Eta Kappa Nu "Outstanding Young Electrical Engineer Award" Organization Committee. He has served on the Administrative Committee of the Lasers and Electro Optic Society (LEOS) of IEEE as President (1982); Vice-President (1981); Newsletter Editor (1978-81); Publication Chairman (1980); representative to the International Radio Science Union (1978-80); Steering Committee Member for the Optical Fiber Conference (OFC) (1984-87); Associate Editor, Photonic Technology Letters (1989-present); and in (1984-85) was a LEOS National Lecturer. He has served on numerous committees for the OSA: including Applied Optics Patents Panel (1983-89); Fellows &

Honorary Members Committee (1988-90); Vice-Chairman (1987-88) and Chairman (1988-89) of the Optoelectronics Technical Group; and Steering Committee Chairman (1989-92) for the Conference on Lasers and Electro-Optics (CLEO). He was a member of the Technical Activities Board of the IEEE (1982); a member of the IEEE Engineering Accreditation Commission Ad hoc Visitors Committee (1981-82); was Publicity Chairman for the 1981 and 1983 IEEE International Electron Device Meeting (IEDM); and has served on ELECTRO, the IEEE Northeast Electronic Convention, as Film Theater Chairman (1977, 1979, and 1981), Convention Director (1987), Vice-Chairman of the Board (1989), Chairman of Executive Committee (1989), and on the Board of Directors (1985-89).

Throughout his career he has served on numerous technical conference program committees and was Co-chairman of the following conferences: 1981 SPIE Conference on Advances in Laser Scanning Technology, 1982 SPIE Conference on Optical Disc Technology, 1984 and 1985 OSA/IEEE Optical Data Storage Conference, and 1987 and 1989, OSA/IEEE Conference on Lasers and Electro-Optics (CLEO).

He was the Chairman of the Electronics Physics Dept. of the Evening Division of LaSalle University in Philadelphia (1983-91) where he had been Adjunct Professor since 1973.

He has served on the Industrial Advisory Committee of Union College, Scotch Plains, NJ; EE Advisory Committee, Villanova University; and Editorial Board of ASEE.

He has also served in local community government for over 20 years as: Member of Land Use Committee of Environmental Commission (1970-72); Advisor to Planning Board (1973); Chairman of Sewerage Advisory Committee (1974-77); Chairman of Sewer Operating Committee (1977-84); Chairman of Special Assessment Board (1982); Member of Growth Management and Planning Committee (1989-90); and Vice-Chairman of Regional Sewerage Authority (serving 7 communities in Central NJ 1980-present). In 1992 he received the West Windsor Township "Volunteer of the Year Award" for this 20 years of community service.

Dr. Bartolini, his wife, Janice, and their three daughters (Jill, Ellen, & Robin) have lived in West Windsor Township, NJ since 1968.

# CHAPTER ACTIVITIES

by Alan Lefkow

As reported in the May '92, BRIDGE, high quality annual reports reflecting pride in chapter accomplishments marked the Outstanding Chapter-Activities Award recipients for 1990-91. Their chapter reports took advantage of today's sophisticated desktop publishing techniques to produce reports that did full justice to their matching outstanding program of activities. Each report was well-written and looked as good as it read. This year's competition clearly marked a new plateau of achievement in HKN's college Chapter-Activities Award program.

Beta Chapter, Purdue University, was voted National Winner for its very impressive level of chapter activities. Beta again demonstrated this chapter's dedication and commitment to their fellow students, department, school, and their community. Their report did justice to their high level of accomplishments by being well written, immaculately organized and produced, and photocopied in color to convey the im-

pact of the many colorful photos contained in the report.

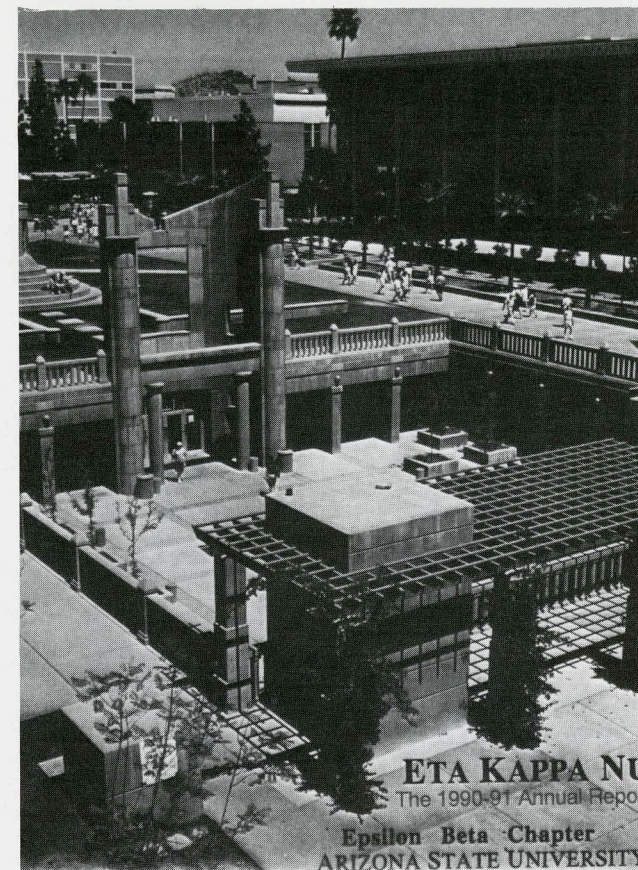
But Beta Chapter was not alone among outstanding chapters. Three Honorable Mention winners matched Beta's report quality, differing only in their somewhat lower level of chapter activities. Gamma Mu at Texas A & M, and Epsilon Beta at Arizona State had immaculate reports that were also reproduced in color. Beta Epsilon, University of Michigan, had an unusual but very well-done report that was laid out as a newspaper-magazine called the *Beta Epsilon Times*. The report was divided into classic newspaper sections of *News, Sports, Business Digest, Society and Entertainment, and Opinion and Future* that covered all of the chapter's activities for the year. And the report was in full color, including photos and typefaces.

In addition to these four winners, three chapters that typified the spirit of Eta Kappa Nu were awarded Certificates of Merit for their meritorious programs. Two of these chap-

ters, Delta Omega, University of Hawaii at Manoa, and Delta Pi, Colorado State University, had well-produced reports with color photos, similar to the other winning chapters. The third winner, Zeta Pi, State University of New York at Buffalo, submitted its quality report as a professionally bound, hardcover book.

All in all, these seven winners have demonstrated that activities worth doing are worth reporting on. Annual reports are generated by the college chapters at the end of the academic year, and are submitted to National in the summer or fall. The Award committee reviews the reports in the winter and announces the winners in the spring. The National and Honorable Mention winners receive award plaques engraved in color, and the Certificate of Merit winners receive their certificate laminated in Walnut.

The Honorable Mention report of Arizona State's Epsilon Beta is reproduced here as an encouraging example of a meritorious runner-up.



THE ETA KAPPA NU ASSOCIATION  
THE INTERNATIONAL ELECTRICAL ENGINEERING HONOR SOCIETY



## Statement of Purpose

The Eta Kappa Nu Association is the International Honor Society for Electrical Engineers. Outstanding undergraduates, graduate students and distinguished professional engineers are elected to a Chapter or local Eta Branch. Eligibility is dependent on marked ability, as evidenced by scholarship, personal character, useful voluntary services and distinguished accomplishments. Besides the stimulation and reward of scholarship, Eta Kappa Nu has a far broader purpose than merely to award a badge of distinction to scholars. Its main purpose is for the members to be a constructive force, helping fellow members and non-members alike to improve the standards of the profession, the courses of instruction, and the institutions where the chapter is established.

These are the purposes of the Epsilon Beta Chapter of Arizona State University. Towards this end, the Chapter has implemented several programs to serve the engineering college. For the past several years, members have helped with pre-registration advisement for all electrical engineering students. This past academic year of 1990 - 1991, the group initiated a tutoring program, in conjunction with the Tau Beta Pi Engineering Honor Society. Also new for this year, a résumé book for both members and non-members was published. To further meet the purposes conceived by the organization's founders, the Chapter is organizing a High School Outreach, inviting local high school students to the Arizona State campus and exposing them to the engineering "experience."

This past year has been very fruitful for the Epsilon Beta Chapter, as we have continued past student services, successfully implemented new programs, and planted the seeds for additional projects to serve the engineering college (both non-members and Eta Kappa Nu members alike).

— Michael Wong  
College Council Representative, 1990-91

Epsilon Beta Chapter of Eta Kappa Nu  
Arizona State University - Engineering Research Center 101A  
Tempe, AZ 85287-5706  
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Phone: (602) 965-3128

## TABLE OF CONTENTS

President's Message .....	1
Epsilon Beta's 1990-1991 Officers .....	2
Meetings .....	3
Pledge Events .....	6
Social & Intramural Activities .....	10
Chapter Services .....	14
Industrial Relations & Career Development .....	22
Other Activities & Accomplishments .....	27
Looking to the Future .....	29
Honors, Awards & Recognitions .....	31
Engineering Day .....	35
Appreciation .....	37
Finale .....	38
Appendix A: 1990-91 Committee Chairs & 1991-92 Officers .....	39
Appendix B: 1990-91 New Members .....	40
Appendix C: Financial Summary .....	41
Appendix D: Summary Sheet .....	42

## President's Message

1990-91 has been a prominent year for the Epsilon Beta Chapter of Eta Kappa Nu. While continuing with our traditional events, such as the breakfast mixer and the electrical engineering pre-registration, we have established several new activities. These activities range from a free tutoring service and stadium cleanup to a soccer match and the Electrical Engineering Forum.

In addition to organizing several new events, we were able to establish an office with our own phone line, computer, and electronic mail. We have also installed an events hot-line to keep our members informed of our many activities.

1990-91 has also been a year of "records" for Epsilon Beta. In this year, a record number of initiates were inducted into HKN, a record number of members participated in our general meetings, a record number of new activities were established, etc. Also in this year, Epsilon Beta's relation with the other engineering and non-engineering campus organizations has been considerably strengthened. In particular, we now have very strong ties with the local chapters of Tau Beta Pi (Engineering Honor Society), SWE (Society of Women Engineers), and IEEE (Institute of Electrical and Electronics Engineers).

Several awards have been presented to the outstanding members of HKN. These awards include HP28s calculators, as well as memorial and achievement plaques. We have also recognized the outstanding faculty members among the EE instructors.

Towards the end of the fall semester I was shocked to learn that Nick Avaneas, our vice-president, was called for active duty in operation Desert Shield/Storm. We have been in contact with Nick since his departure. He is fully updated on our chapter's activities and "very delighted" to have received our greeting card and letters. A memorial plaque is awaiting his return on June 8th. In his absence, David West has acted as our V.P. His admirable performance in this capacity was the major reason for his election as the 1991-92 president of Epsilon Beta.

In 1990-91, Epsilon Beta grew from a moderate past into an enterprising chapter with a dynamic outlook for the future. We certainly owe many of our achievements to the recognition we have gained within the College, on campus, in the community, and in industry. In turn, earning such a sound reputation would not have been possible without the dedication of the HKN officers, and of course, without the participation of our active members.

In our officer meetings throughout the past year, we discussed activities of other HKN chapters as well as our own "traditional" events and possible methods of improving them. We particularly focused on the accomplishments of the Delta Omega (runner-up for the 88-89 Outstanding Chapter Award) and the Beta Chapter (88-89 Outstanding Chapter Award recipients). During 1990-91, we also initiated many other activities. Hopefully, these events, which are outlined in this report, will be a useful resource for other chapters as well as the future officers of Epsilon Beta.

I believe that Epsilon Beta's 1990-91 accomplishments are just the beginning of a trend that will result in fruitful years to come. The 1990-91 school year is gone, but the fun memories, and the results of our accomplishments at ASU are here to stay.

Sincerely

*Arya Behzad*

Arya Behzad

### Eta Kappa Nu Officers 1990-91

- President: Arya Behzad
- Vice-President:
  - Fall 1990 Nick Avaneas
  - Spring 1991 David West
- Recording Secretary: Brian Hanson
- Corresponding Secretary: Rebeca O-Jimenez
- Treasurer:
  - Fall 1990 Vincent Kwok
  - Spring 1991 Katheryn Jarvis
- College Council Representative: Mike Wong
- Bridge Correspondent: David Hsiung



From left to right: Vincent Kwok, David Hsiung, Rebeca Obregon, Dr. George Beakley, Arya Behzad, Nick Avaneas, Dr. Roedel, Mrs. Roedel, Brian Hanson, Mike Wong

#### General Meetings

Our general meetings were intended to keep active members up to date on the upcoming events and to inform them of the recent activities. Sometimes during these meetings, members voted on different issues (new officers, award recipients, etc.) Some meetings featured guest speakers from industry. Accomplishments of the chapter, upcoming events, proposed plans, elections, and various talks and lectures were among the activities performed during these meetings. Brian Hanson, our recording secretary, kept a precise record of the events of each meeting. These minutes were later made available to members who were unable to attend. The minutes were also posted on three bulletin boards throughout the College. A copy was also posted in a "minutes book" for the information of future officers.

A (very) condensed version of the minutes is shown below:

#### Fall 1990

- 9/13/91 Semester calendar distribution; establishment of office (MU), electronic mail, new bulletin boards, etc.; nomination forms for several local and national awards distribution; database structure installation on ECA216; tutoring service underway, Initiation issues, ASASU funding; Breakfast Mixer; *Guest Speaker:* Derill Wolkins, Motorola Semiconductors Division, *Topic:* Life in the Real World.
- 10/11/90 ERC tour; pre-registration advisement; Palo Verde tour; initiation video and pictures available; Spark Yearbook group picture; committees formed.
- 11/8/90 Stadium cleanup/pizza party; College Council news; new office (ECA320); softball vs. Tau Beta Pi; broomball game; tutoring to be coordinated with Tau Beta Pi for spring; electromagnetics seminar.

#### Spring 1991

- 2/7/91 Semester calendar distribution; initiation information; resume submission deadline for Resume Book; HP28s raffle; EE Forum; newsletter; old certificates; database update forms; soccer team; Breakfast Mixer; Young Faculty Teaching Award; College Council news; new phone line;

#### The Semi-Annual Breakfast Mixers

HKN's third semi-annual breakfast mixer was held on Wednesday, 12th of September. This informal yet important mixer provided an opportunity for prospective initiates to get acquainted with the EE faculty, HKN members and most importantly to obtain information about the requirements and objectives of being an HKN member. EE secretaries and other people who had helped HKN in previous semesters were served "breakfast in the office" on this day.

The same main objectives were carried over to our Spring '91 Fourth Semi-Annual Breakfast Mixer, which was held on Thursday, February 7. Professors as well as members kept asking HKN officers about the date and time of this event. More than 70 people attended this mixer. The food was so good, that by 10:00 the plates were almost clean.

We have already been approached by the faculty inquiring about the Fall '91 mixer!



Semi-Annual Breakfast Mixer From Fall, 1991  
Can you spot the person that skipped dinner last night?

During the 1990-91 school year the two traditional HKN initiation ceremonies were held. During both the spring and fall semesters, initiation information meetings were held after invitation letters were sent out to pledges.

#### Fall '90 Initiation

One of the most important events of the fall semester was the initiation. It was held at the Sheraton Tempe Mission Palms and the guest speaker was Dr. G. Beakley, the Associate Dean of the College of Engineering. Also present were special guests Dr. and Mrs. Roedel, but unfortunately our advisor Dr. DeMassa could not attend due to prior engagements. The initiates were inducted as members in a formal initiation ceremony followed by a sumptuous dinner. Seventeen initiates were inducted during this ceremony.

#### Spring '91 Initiation

In an attempt to increase the number of qualified initiates while maintaining or exceeding the qualification of the candidates, we asked Dr. Ferry, the chairman of the EE department, to send a separate invitation to each candidate. Also, Dr. Lattie Coor, President of Arizona State University, was invited to be the guest speaker at the initiation ceremony. Furthermore, the public media was encouraged to attend the event. Prospective initiates were also introduced to HKN through the EE Forum, held February 6 in the Memorial Union.

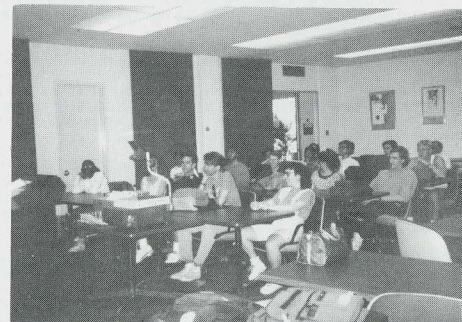
As a result of these efforts, and despite increased pledge requirements, a record 37 initiates accepted the invitation to join HKN. For the first time in the past several years, three faculty members in the EE department were inducted as professional members. Also, for the first time ever, a President of Arizona State University was inducted.

The Spring Initiation was held at the Pointe at South Mountain. It was a very special occasion as we had many distinguished guests, such as Dean Haden of the Engineering College, and Chairman Ferry of the EE department. Of course Dr. DeMassa, our faculty advisor, along with faculty members Dr. Grondin, Dr. Skromme, Assistant Dean Backus, Dr. Hashemi-Yeganeh and Dr. El-Ghazaly were also present. The latter three were our faculty initiates. Dr. Skromme was presented with the Young Faculty Teaching Award during the ceremony. Unfortunately, President Lattie Coor could not attend the initiation ceremony due to a personal health problem. The initiates were inducted in a formal ceremony followed by a wonderful candle-lit dinner.

Both initiation ceremonies were video taped. These video tapes were made available to members. Additionally, each initiate was photographed by one of our members as they accepted the honors of

events hot-line; Who's Who awards; Nick Avaneas' (past V.P.) departure for participation in Operation Desert Shield/Storm; additional committees formed.

- 3/14/91 Pre-registration Peer Advisement; Adopt a Highway and pizza party; ERC tour; pot-luck party; HP28s presentation to raffle winner; officer nominations for 1991-92; *Guest Speaker:* Ken Lancaster, Honeywell Commercial Flight Systems, *Topic:* Career Opportunities in the Industry, and particularly at Honeywell.
- 4/4/91 Softball; broomball; presentation of Epsilon Beta's Outstanding Member Awards; Appreciation Awards to Officers and Faculty Advisor; elections; *Guest Speaker:* Kie Park, Motorola Corporation, *Topic:* Career Opportunities at Motorola.



Third general meeting of spring 1991, and everyone is still awake!

#### Officer Meetings

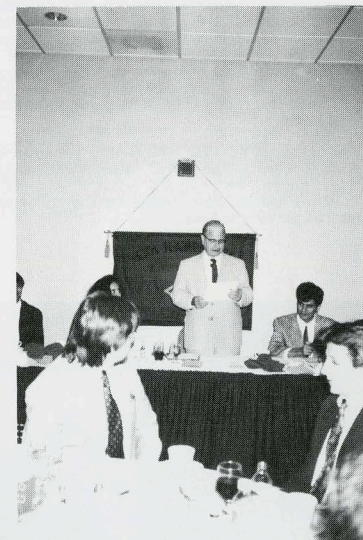
The first officer meeting was held on Monday, July 10. Several other "summer meetings" followed in an attempt to organize the fall semester activities. This pre-school planning of events proved to be extremely useful. Also, during the Christmas break, three officer meetings were held (for officers who were in town during that time).

During the fall and spring semesters, officer meetings were held on a weekly basis. Each meeting lasted an average of eighty minutes. During these meetings, upcoming events were organized and responsibilities were delegated among the officers and participating committee chairs.



A Christmas officer meeting held in ECG 320

becoming a member by signing the HKN ledger. The pictures were then made available to the members at a nominal cost.



Dr. George Beakley gives his speech during the Fall 1990 Banquet.



Fall 1990 Initiation was held at Tempe Mission Palms Resort.  
By the looks on their faces, dinner had not yet been served!



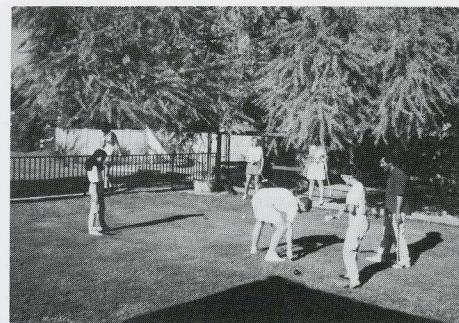
The Spring 1991 Banquet was held at The Pointe At South Mountain.  
This exclusive five star resort is located in Southeast Phoenix.



**Pot-Luck Party**

Some of the best food anywhere can be found at pot-luck parties. The culturally diverse group of people that make up the Epsilon Beta chapter each donated one of their favorite dishes to the first pot-luck dinner organized by HKN. The party was both fun and filling. A special thanks to Lucy Loh, the chairperson of the pot-luck committee, and to Dr. DeMassa, who made his home available for the party. The party was held from 2:00 to 7:00 p.m. on Saturday, April 6. Attendees enjoyed the food and drinks as well as croquet and a game of horseshoes.

The party was so successful, we plan on having a pot-luck as an annual or semi-annual event.



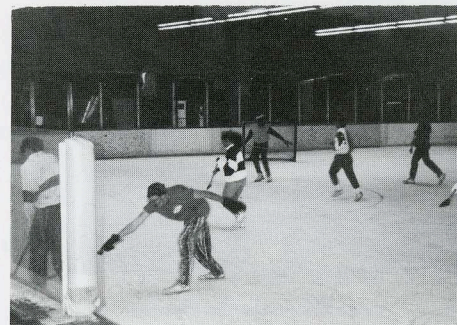
A "friendly" game of croquet at Dr. DeMassa's house. No fatalities were reported.

**Broomball**

Broomball is a sport that combines the best elements of hockey, soccer, football, and WWF wrestling. After a skating rink is closed for the night, the floor can be rented for a game of broomball. Still wearing street shoes, opposing teams hit the ice (literally) using "brooms" to try to score goals with a small orange ball about twice the size of a hockey puck. The object of the game is to score the most goals while keeping your body in one piece! "Traditionally," the game is held after a happy hour at Sunny's Pizza, a local restaurant.

In the fall semester HKN challenged Tau Beta Pi to the first game. The game started at 11:30 p.m. on Saturday, Dec. 1st, and was over at 12:30 a.m. on Sunday, Dec. 2nd (it took two days!). It was a great game and everybody who was present enjoyed it (aside from the fact that everybody was complaining of body aches for several days!). The final score? HKN: 1, Tau Beta Pi: 6; a devastation to HKN's athletic reputation!

During the spring semester, the popularity of the event grew and over 30 people attended the re-match. We reaped vengeance this semester with a final score of 3 to 1 (go defense!)



HKN reaps vengeance on Tau Beta Pi during the Spring 1991 Broomball game. (You didn't think we were going to show you a picture of the game we lost, did you??)

**Softball**

After Tau Beta Pi had been given a sound thrashing in the fall semester (final 32 to 16), they challenged us to a re-match at Tempe Beach Park in the spring. However, the re-match turned into a volleyball game instead. Prior to both games, a picnic was held. Barbecued food and drinks were available.



Lily "the Sluggo" Tom prepares to knock one out of the park during Fall 1990's Softball match.

**Epsilon Beta's Soccer Team: The Tigers**

In the spring semester, we formed a soccer team. Our first match (and the only one of the semester!) was against the well-conditioned, intramural electrical engineering faculty team. Obviously the opponents underestimated the HKN team. In the first half the tigers scored one goal, and at the end of ninety minutes, the score-board read: HKN Tigers: 3, Faculty: 0. Dr. DeMassa, our faculty advisor was very happy to have played on our side! The game was refereed by a senior professional engineer.

A re-match will be played in fall '91. The faculty are seeking revenge, and we are looking forward to the game. Also, Ashim Shatil Haque, our team manager, coach, and captain (what a guy!) is trying to organize more matches against other teams for the fall semester. The Faculty Team was just too easy to beat.



The Victors  
Eta Kappa Nu Tigers defeat the Evil Faculty.  
Will our next test scores reflect the victory?

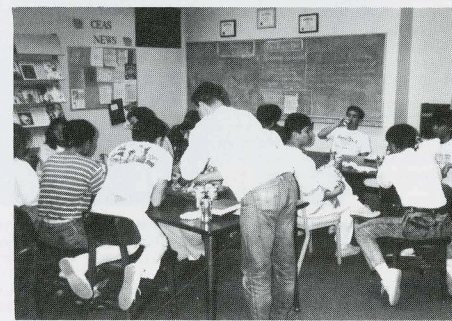
**Stadium Cleanup**

Arizona now has a professional football team (the Phoenix Cardinals) that plays in ASU's Sun Devil Stadium. After the football games, the stadium needs to be cleaned of all the litter and trash left by the fans. This job is usually contracted out to school organizations. Each organization cleans one quarter of the 72,000 person capacity stadium.

In our case, the stadium cleanup came right after one of the most "pound gaining" holidays of the year. All the initiates along with the hardworking, very active members rolled up their sleeves and worked off a few pounds of the thanksgiving turkey in the stadium cleanup. Some of us, however, may never eat nachos again.

Stadium cleanup was a major source of income for us. It also provided a service to the university. The stadium management was very pleased with HKN's performance. We have already been contacted by them to participate in the cleanup for the fall of 1991.

The cleanup was followed by a pizza party for all of the volunteer participants. It was held on campus in the Engineering Center, and it included free pizza and soda.



Let the feasting commence! After cleaning Sun Devil stadium, all those who still had an appetite ate and drank their fill at the post-cleanup pizza party.

**Technical Tours**

During the 1990-91 year, we organized and conducted three technical tours. We believe that the participants found the tours interesting, gained much information, and enjoyed the experience.

**Palo Verde Tour**

On Saturday, Nov. 3, we left for Palo Verde Nuclear Power Plant at 8:30 in the morning. We had rented two ASU vans (funded by ASASU) and we had a lot of fun on our way over. We enjoyed a "Dunkin' Doughnuts" breakfast on the way to the plant. At Palo Verde we were shown a very informative presentation, about two hours long. Among the issues discussed were the safety of nuclear reactors, their cost efficiency, and the basis of their operation. After the discussion, we browsed around in a nuclear mini-museum. Then we went on a bus tour around the plant.



The Palo Verde NGS tour in Fall, 1990 gave students an informative view of one of the world's most efficient nuclear power plants.

**The EE Pre-Registration Peer Advisement**

During the pre-registration weeks in fall and spring, initiates and members assisted the EE students in selecting their courses (and of course their two cents on the EE faculty) and pre-register for the upcoming semester.

While being a major source of income for HKN, the pre-registration peer advisement program has proven to be a very valuable asset to the EE students. While some students seek their faculty advisors' recommendations before coming to the HKN student advisors, most prefer to consult directly with an experienced student before they register for the upcoming semester's classes. Almost every EE student has his pre-registration slip signed by an HKN advisor.

The pre-registration is also an effective medium for HKN information to reach EE students, and to introduce HKN to underclassmen. Brochures about HKN are made available to the students as they register for their next semester classes. Advisors answer any questions about the HKN society as well as questions about classes and professors.

This service has greatly exposed HKN on campus, helping it to become a known entity in a university with a total enrollment of over forty thousand students.



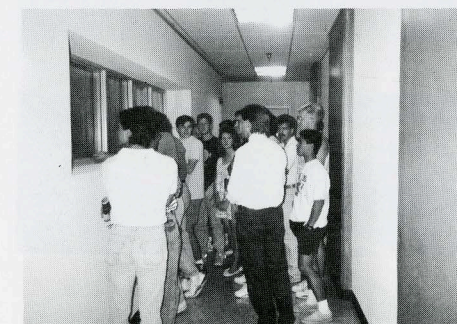
At peer advisement, students ask HKN members about classes and professors.

**The ERC Tour**

Arizona State University boasts an extensive research center. Industry has donated over two-hundred and fifty million dollars worth of equipment to the engineering college, including a class 100 clean-room, a molecular beam epitaxy (MBE) machine, and the artificial intelligence computer used to produce one of the world's purest silicon pulls. All of this equipment is located in the Engineering Research Center on campus.

While graduate students work extensively with professors in this facility, undergraduates rarely see the inside of the building. For this reason, the ERC tour was established to show students what they could work with as graduate students and what type of equipment the university had for use. Included also on the tour were demonstrations of several gaseous and electric lasers, and an electron microscope. Professor L. Akers the Director of the Center for Solid State Research conducted the fall tour, while Dr. M. Kozicki ran the spring tour.

Several pictures of the fall tour were taken by ASU's Spark Year Book photographer. One of these pictures along with a report on HKN was selected as the feature article on ASU's Honor Societies. This article has been published in the Spark.



Students look into a class 100 clean-room during a tour of the Engineering Research Center

### Tutoring

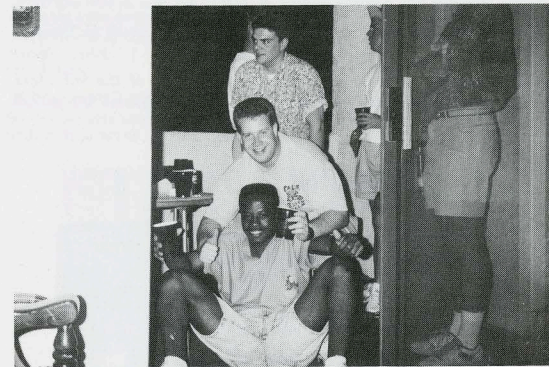
In the fall semester, for the first time ever, Epsilon Beta initiated its free tutoring service. Members and initiates participated in this service, while officers strived to publicize it. HKN tutors signed up in a log-book at least a week in advance, and students checked the log-book for the availability of tutors. During this semester, mainly freshman and sophomore level courses were tutored.

In an effort to enhance this service, a joint committee of HKN and Tau Beta Pi (The Engineering Honors Society) members was formed to discuss possible improvements to the service. With the two organizations working in unison, more people could be used for tutoring, and therefore the service could be made more consistent throughout the week. Also, the committee decided to maintain the log-book system, but to mainly utilize it for higher level courses using graduating seniors and graduate students as tutors. The committee also decided to schedule a member or an initiate to tutor at a particular time every week throughout the semester. This would ensure the presence of at least one tutor at every hour of the school day. By the end of the semester, tutors were available for assistance in virtually all EE courses as well as most (non-senior level) physics and math courses.

Plans have been made for further publicizing this service to the university in the coming semester.

### Electromagnetics Seminar

Epsilon Beta co-sponsored a seminar with the Telecommunications Research Center at ASU. Prof. Alan Taflove, a distinguished IEEE lecturer from Northwestern University, presented his talk. The lecture was entitled "Where is Engineering Electromagnetics Going?" He expressed his opinion regarding the importance of e-mag and the Maxwell equations in future EE applications. He also demonstrated several interesting video tapes produced by supercomputers on modeling Maxwell's equations. Refreshments were served. This seminar was open to the public. Many instructors and graduate students attended.



OOPS!! That certainly isn't the Electromagnetics Seminar (if it were, E-mag seminars would be a weekly event)

### Electrical Engineering Forum

During the Christmas break we invited several major electronics corporations to participate in our spring EE Round-Table Forum. Scheduled for Wednesday, February 6. Four major corporations attended our event.

Each company was asked to make a monetary donation for their participation in the Forum. Part of these donations were used to subsidize the cost of the dinner for participants.

This event was highly publicized by flyers posted all over campus, and by the announcements instructors read at the beginning of their classes. A team of officers called all of the HKN members and initiates to personally invite them to this event. Most of the advertising, however, was done by students talking about the upcoming event.

A ticket sales booth was set up in front of the Engineering Research Center on Monday and Tuesday prior to the event. Tickets were made available to HKN members for \$5 and to non-members for \$7. This cost included the dinner served after the round-table discussions.

A conference room was reserved for each of the corporations attending the EE Forum: U.S. West Communications, Honeywell, IBM, and Motorola. They were invited to discuss employment possibilities in full-time positions as well as summer internships and co-op programs. Representatives from these companies handed out information on the current job market as well as future opportunities, and the objectives and goals of their companies. They also collected students' resumes.

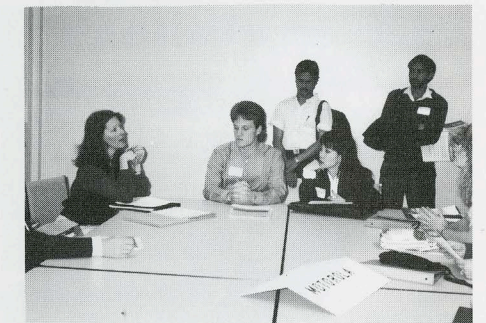
Student participants were divided into four groups. Each group met with a company representative for 25 minutes, and then the groups switched rooms until they cycled through all four companies. This let every student meet with each representative in a small, personal group.

After the round-tables were complete, the students and company representatives were invited to stay for a three course catered meal, to be held in the same building.

The success of the EE Forum has prompted us to establish it as an annual activity. We plan on enhancing the Forum so that it will be able to accommodate more students. Eight companies have tentatively agreed to participate in our 1992 Forum.



Terri James, representative of IBM Austin, explains the work requirements normally demanded of students when they come to interview for open positions.



Debbie Ellison, a recruiter from Motorola SPS, explains employment opportunities at her company.

### Adopt A Highway

Eta Kappa Nu participated in the Arizona Department of Transportation's (ADOT) highway cleanup program. In this community service project members clean one mile of highway by bagging litter and debris on both sides of the road. By providing several hours a semester, students help to better keep Arizona highways. This volunteer activity also helps keep the environment clean and preserves the Sanoran Desert. Starting spring '91, all the members must participate in this activity at least once when they are initiated.

A two year commitment was made to ADOT in early spring '91. This semester's initiates along with some of the members cleaned up a mile of Scenic Root 87 approximately 30 miles north-east of Phoenix. Participants car-pooled to and from the site.

After the event, a pizza party rewarded (the stomachs of) those who had volunteered their time.



On SR87, a lonely sign proclaims our destination.



A well-trained crew gets ready to "clean up this town". Red vests by Gucci.



A proud crew poses for a picture before the hard work begins.



Interested students question Kathy Locke, a representative of Honeywell Inc.



After a long evening of round-tables and resume exchanging, students relax and enjoy a three course catered meal in the Memorial Union's Gold Room.

### Resume Book

For the first time ever, the Epsilon Beta Chapter of Eta Kappa Nu compiled a resume book to be sent to various electrical engineering firms. All HKN members were invited to include their resumes as a free service. Non-members were allowed to submit a resume if their cumulative GPA was above a 3.2 (on a 4 point scale). Companies were anxious to receive the book, and we even received an advance order from one corporation (Microsoft), who gave us their Federal Express number for mailing.

The Resume Book was prepared in an effort to match career seeking students to potential employers. The book was divided into three sections. The first part contained resumes of students enrolled as Juniors; the second was comprised of students with senior status; and the third contained graduate students' resumes. Within each section the resumes were sorted alphabetically.

The forty-three page book was spiral bound with a raised thermal transfer cover. It was distributed to 20 companies nationwide in mid April. We have already received donations from four companies and have been encouraged by these companies to provide further editions.

ETA KAPPA NU  
THE INTERNATIONAL ELECTRICAL ENGINEERING HONORS SOCIETY  
EPSILON BETA CHAPTER



Resume Book

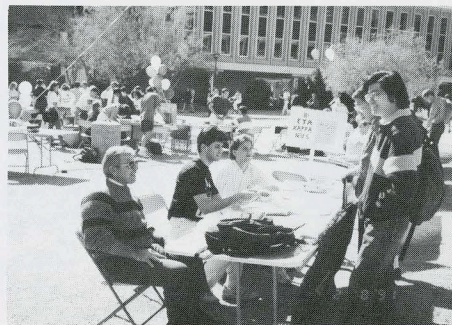


**Major Donations and Fund-Raisers**

Thanks to the efforts of the HKN officers and the fund-raising committee, thousands of dollars worth of monetary and non-monetary donations were made to Epsilon Beta. Major monetary donations were made through the EE Forum and the resume book by Motorola Corp. (Government Electronics Group as well as the Semiconductors Group), IBM, Honeywell Inc., Microsoft Corp., and VLSI Technologies. Locally, donations were made by ASASU, the Engineering College and the EE Department.

Funds were also raised by HKN's participation in the stadium cleanup, pre-registration advisement, raffle ticket sales, and broomball and softball ticket sales.

Non-monetary donations included an IBM PC computer, a new phone line (installation and operation costs waived), two HP28s scientific calculators (thanks to Hewlett Packard Corp.), and the components of two bulletin boards.



Students purchase tickets for the raffle of an HP28s calculator during Club Day. This was one of the many fund-raising events that helped Epsilon Beta sponsor all of its activities.

An events hot-line was also installed at our new office. This hot-line was periodically updated and members were able to obtain recent events information by calling the hot-line number.

**Newsletters**

During the Christmas break, members of the Newsletter Committee published the first edition of Epsilon Beta's *Local Bridge*. The newsletter updated the members on past accomplishments, future plans, and other topics of interest. The *Local Bridge* was mailed to all active members and electrical engineering faculty. The spring edition of the newsletter will be published soon.

**Exam Files**

Old exam files were made available for the use of all engineering students in the spring semester. The old tests proved to be a valuable asset in studying for upcoming exams.

We expect that this file will grow rapidly with the influx of new members, and will be an excellent tool for studying.

**Looking to the Future****Future Plans**

In addition to continuing the activities established in previous semesters, the following programs and events have been planned for fall '91. Most of the details of these events have already been worked out, and they are ready for execution.

**High-school Recruiting**

Epsilon Beta has begun the OASUEP (Orientation to ASU's Engineering Program). OASUEP is a volunteer effort to introduce high-school seniors to the field of engineering and in particular, electrical engineering. OASUEP is a two step program executed by college juniors and seniors who are members of Eta Kappa Nu. In the first stage of the program a team of electrical engineering honors students will give a short talk and show video tapes at several local high-schools. The second stage consists of inviting a select number of the high-school students to ASU and giving them a tour of the labs, libraries, computing sites and recreational facilities. Each group of two or three high-school students will join an HKN member for lunch in one of the university's cafeterias.

Letters have been sent out to local high-schools, and video tapes and slides have been prepared for the program. These visual tools will be utilized at the high schools to attract students to the field of engineering.

**Other Activities and Accomplishments**

Throughout the year, there were many activities and accomplishments that deserve special notation. Below is a list of events that were recognized as being important activities for the Epsilon Beta Chapter.

**Blood Drive**

Every semester, Arizona State University sponsors an on-campus blood drive as a service to the community. This fall, Eta Kappa Nu helped sponsor the drive by providing advertising as well as volunteers to donate their blood.

**Who's Who**

In conjunction with the Associated Students of Arizona State University (ASASU), HKN participated in the advertising for the publication *Who's Who in American Universities and Colleges*. It comes as no surprise that three Epsilon Beta members were represented in this book later on in the semester.

**The Home Office**

We were able to establish an office in the Memorial Union early in the fall semester. Within a few months, the university was able to allocate office space in the Engineering Complex G wing. With this new office close to the engineering classes, officers could organize chapter activities much more efficiently; especially since we were also able to obtain a computer for our office. Also, we requisitioned and received a new phone line in the office. All installation and maintenance fees were waived by the university. In the summer, we set up a database to facilitate the task of keeping track of our members. This database was then installed on the network in ECA 210. It has been updated at the end of each semester thereafter. In addition to the names, phone numbers, and addresses of the members, summaries of their activities and involvements in HKN have been recorded in the database. This assisted us in determining the recipients of HKN awards.

**Bulletin Boards and E-Mail**

This past semester, we obtained the funding for the components of two bulletin boards. These bulletin boards were built and installed by our Engineering Lab Services.

In the Fall, an electronic mail account was established for inter-chapter relations and corporate communication. The members were also encouraged to correspond to us through e-mail. Our address is:

ETAKN@ASUACAD.BITNET

Final details of the program will be worked out in the summer and early in the fall semester.

**A Newer Office**

We have been promised to be allocated an exclusive office in the new Barry Goldwater Engineering Complex, which is presently under construction. At this time, we share our office with Tau Beta Pi, the Engineering Honor Society. We might even be able to obtain an ethernet connection for the office so that we could constantly monitor our e-mail and the electronic bulletin boards.

**Volleyball Game Against HKN of University of Arizona (U of A)**

A volleyball match against U of A's HKN was scheduled for the end of the spring semester. Unfortunately the match had to be postponed because of the congested end-of-semester schedule. In fall '91, we will leave ASU on a Saturday morning, have a picnic with HKN of U of A, play a game or two of volleyball, and visit the U. of A. planetarium. Funds for a van-pool have already been secured.

**Invitation of the International HKN President**

Mr. James D'Arcy, the International President of Eta Kappa Nu Association, has been invited to participate as the guest speaker in our fall '91 initiation ceremony. The necessary funding has been secured by various activities and by the donation of the Associated Students of Arizona State University.

**The 1991 IEEE Global Communications Conference**

During spring we were contacted by the organizers of the 1991 International IEEE Global Communications Conference. They inquired about our interest in participating and helping out in the conference. After working out the details, we agreed to participate in the event which is scheduled to be held in Phoenix, AZ, in December 1991. Participation in the conference will be a pledge requirement for the initiates of fall '91.

**Program Review of Electrical Engineering: Site Visit, Decennial Review**

Epsilon Beta Members participated in the review of the electrical engineering program. In a question and answer session, they discussed their opinions about the program with ASU officials as well as representative faculty from University of Notre Dame and University of Texas in Austin.

**Honors, Awards and Recognition**

Epsilon Beta members were awarded with various local and national awards throughout the 1990-91 year. Following is a partial listing of the more prestigious awards:

- 1991-92 Honeywell Awards For Engineering Excellence  
Darrin R. Benzer, Henry Leung

This year we were informed that both of the prestigious Honeywell Awards for Engineering Excellence were presented to HKN members. Benzer, a loyal member, and Leung, a spring initiate, were the recipients of this award which honors excellence in academic work in an engineering major.

- Who's Who Among Students in American Universities and Colleges  
Mike Wong, Lily Tom, Arya Behzad

Wong, our College Council Representative, Tom, an active member, and Behzad, our President, were the only three EE students elected for this award. The selection was based on Associated Students of Arizona State University's (ASASU) recommendation to the Who's Who Council. Wong was also the only spring '91 graduate who completed the Honors College requirements. His **Honors Thesis** title was: An Exploratory Study of Spectrally Resolved Transmission Cathodoluminescence.

- 1990-91 Outstanding CEAS Student Leader  
Arya R. Behzad

Behzad was awarded with the College of Engineering and Applied Sciences (CEAS) Outstanding Student Leader Award for his role as the President of the Epsilon Beta Chapter of HKN. This award is presented to an officer of one of the CEAS's student organizations. Behzad also received the **Alumni Association Outstanding Graduating Engineer Award** along with numerous other awards.

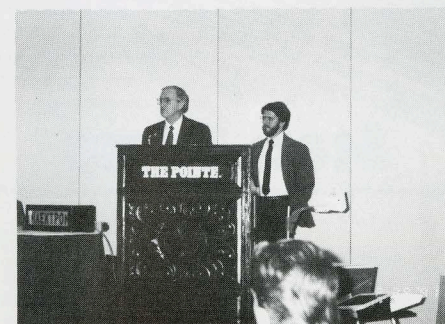
- Epsilon Beta Outstanding Member Award  
Shahpar Shahpar

Shahpar, an exemplary member, was the recipient of Epsilon Beta's highest honors: the Epsilon Beta Outstanding Member Award. She was presented with an HP28s calculator to reward her numerous contributions to the chapter. She can take much of the credit for the successful execution of the Adopt A Highway project and for the organization of the OASUEP program. She was a participant in most of the chapter's activities and was willing to help everyone with everything.

Behzad, is one of very few honorable mentions in this prestigious national competition.

- Other Awards  
CleanRooms Magazine Scholarship: Scott Balster  
M. M. Lowry Memorial Scholarship: Craig Lehman  
Institute of Nuclear Power Operations Scholarships:  
Melissa Chu  
Jeff Connors  
Katheryn Jarvis  
Shawn Pautz  
American Nuclear Society (ANS) Power Division Scholarship: Shawn Pautz  
Lawrence Livermore National Laboratory Honors Program:  
Shawn Pautz  
Melissa Chu  
William Schindele  
U.S. Navy NUPOC Award: Katheryn Jarvis  
American Nuclear National Design Competition:  
Sandia Laboratories Radiation Studies Research Award:  
Brad Baker  
Marvin Sheldon Memorial Scholarship: Craig Lehman  
CEAS Alumni Association Scholarship: Bryan Boatright  
Sun Angel Foundation: Bryan Boatright

Also, professor Thomas DeMassa, our Faculty Advisor, and the chapter officers were presented with "Appreciation Plaques" by President Behzad during the last general meeting of the spring semester.



Dr. Ferry (left) presents Dr. Skromme (right) with the Outstanding Young Faculty Award at the Spring '91 Banquet.

- Epsilon Beta Outstanding Member Honorable Mentions  
Lily Tom, Mike Vicker, Ashim Shatil Haque, Dan Murray

Lily Tom, an active member, was presented with this award at the Spring Initiation ceremony because of her assistance in arranging the EE Forum. As the President of the Society of Women Engineers (SWE), she had much experience in organizing such programs. Her expertise was one of the determining factors in the Forum's success. Haque was presented with this award for his role as our "professional" photographer and also for his contributions to our soccer team. Vicker was chosen as a recipient because of his participation, assistance, and cooperation in many of our events. As one officer stated, "Need help? Call Vicker." Murray was an exemplary graduate student member. While working on his Ph.D., and working as a teaching assistant for the EE department, he was present at many of our activities and played an active role in our tutoring program (particularly in tutoring of higher level courses). Each of these members received a memorial plaque.

- Epsilon Beta Exceptional Members  
Rodney Hing, Lucy Loh, David Modin, Shawn Pautz,  
William Schindele, Harold Wang

The above mentioned members were recognized as Epsilon Beta's exceptional members because of their various contributions to the chapter.

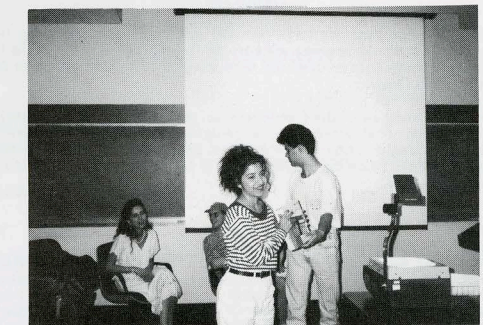
- The Young Faculty Teaching Award:  
Brian J. Skromme

Dr. Skromme, an associate professor of EE, was elected as the recipient of this award by the HKN members. Prof. D. K. Ferry, the department chairman, presented Dr. Skromme with a commemorative plaque at the Spring Initiation ceremony. Dr. Skromme was also nominated as Epsilon Beta's representative for the National Young Faculty Teaching Award. The runner-up for this award was Dr. M. Kozicki.

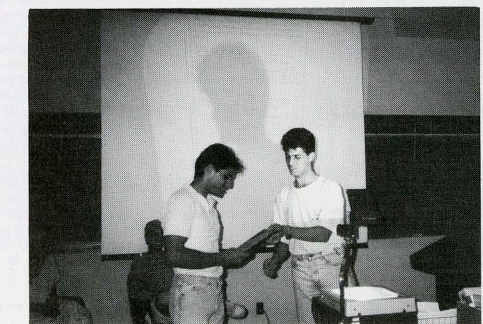
- The School of Engineering Teaching Excellence Award  
Ron J. Roedel

Professor Ron Roedel, an HKN member and our special guest at the Fall Initiation Ceremony, was the recipient of this prestigious award for his teaching as an undergraduate instructor. He was presented with the award at the Spring Engineering Commencement Ceremony.

- Alton B. Zerby Outstanding Electrical Engineering Student Award  
Honorable Mention, Arya Behzad



Shahpar Shahpar receives the HP28s calculator for her contributions to the Epsilon Beta chapter during the Spring 1991 semester.



Michael Vicker accepts a plaque for the Epsilon Beta Outstanding Member Honorable Mention.

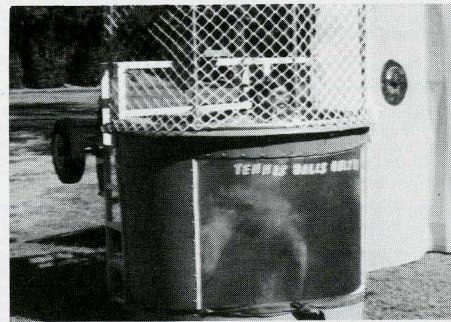
Engineering Day

Eta Kappa Nu members participated in the spring Engineering Day (E-day) celebrations. This event was organized by the CEAS College Council (CEASCC) and held at the Tempe Beach Park. Barbecued food and drinks were available. Among the activities were a volleyball tournament and a "professor Dunk Tank." Another activity that HKN members participated in was the Tau Beta Pi(e) Throw. Proceedings were donated by Tau Beta Pi to the March of Dimes.

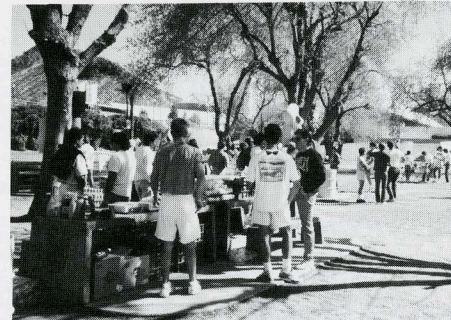
HKN also took part in many other CEASCC activities such as the Club Day.



Our faculty advisor, Dr. DeMassa, somewhat reluctantly participates in the Tau Beta Pi(e) Throw. Member Mike Pennel is about to thank him for his last test score.



EE professor Dr. Holbert "takes a dive" in the dunk tank during E-day.



The food stand is crowded all day long as free chicken, hot dogs, beer and soda is made available to the "poor, starving students."

Thank You...

Throughout the year, we have received assistance from so many helpful people that it would be impossible to list them all here. We would like to thank everybody that contributed to making this the best year ever for the Epsilon Beta Chapter.

However, among all of the people who helped us throughout the past year, there are some that deserve special recognition. Without the assistance of these individuals, many of our greatest goals would never have reached fruition. To the following people we would like to extend our individual and heart-felt thanks:

- Dr. Lex Akers Director, Center for Solid State Research
- Sue Alexander Center for Professional Development
- John Algair ASASU Senator
- Karen Anderson ERC Secretary
- Manny Aroz Dean's Office
- Dr. George Beakley Associate Dean, College of Engineering
- Kathy Brower ERC Secretary
- Dr. Lattie Coor President, Arizona State University
- Dr. Thomas DeMassa Epsilon Beta Faculty Advisor
- Debbie Ellison College Recruiter, Motorola SPS
- Dr. David Ferry EE Chairman
- Dr. Roland Haden Dean, College of Engineering
- Becky Houston Assistant Dean's Office
- Terri James Recruiting Officer, IBM Austin
- Dr. M. Koziack EE Faculty
- Kenneth Lancaster FMS Engineer, Honeywell ATSD
- Dr. William Lewis Assistant Dean, Director Computing Services
- Kathy Locke Staffing Specialist, Honeywell IAC
- Wendy Long President, Engineering College Council
- Kris Mayes State Press
- Cynthia O'Neil EE Department
- Robert Quinn National College Rec. Program Manager, IBM
- Cheryl Ream EE Secretary
- Greg Schultz ASASU Senator
- Ron Smith College Recruiting Manager, Motorola
- Ann Zell EE Secretary

Recognition: A Key to Epsilon Beta's Accomplishments

Recognition was the key to many of our chapter's accomplishments in the past year. Our recognition as an active chapter gained us many donations from the industry as well as the Engineering College. Our community services established us as a trustworthy friend of the local community. Our efforts on campus and the ensuing recognition dramatically increased the number of interested, qualified initiates.

**Involvement**  
HONOR SOCIETY STRESSES MORE THAN JUST GRADES

**Honor society welcomes initiates**

**State Press**

Media coverage of HKN events was an important factor in Epsilon Beta's recognition on campus, within the society, and in the industry.

1990-91 HKN Committee Chairs

Fund-Raising:	David West
High-School Recruiting:	Shahpar Shahpar
Awards:	Daniel Murray
Tutoring:	Shawn Pautz
Soccer Team:	Ashim S. Haque
Pot-Luck:	Lucy Loh
Social Events:	Brian Hanson
Community Service:	Shahpar Shahpar
Newsletter:	D. Hsiung/A. Behzad

1991-92 HKN Officers

President:	David West
Vice-President:	Jim Bertko
Corresponding Secretary:	Susan Kersey
Recording Secretary:	Ashim Shatil Haque
Treasurer:	Michael Vicker
Bridge Correspondent:	Tatyana Dhaliwal
College Council Representative:	David Hsiung

1990-91 New Members

Fall 1990 Initiates

Boris Chong	Loh Lean Choo
Melissa Chu	Rodney Hing
Larry Jung	David Modin
Daniel Murray	James Nucci
Shawn D. Pautz	Amanda Pham
Matthew Pridemore	William Schindele
Shahpar Shahpar	Richard J Stewart, III
Michael D. Vicker	Seng Vonsachang
David I. West	

Spring 1991 Initiates

Peter Benoit	Nathaniel Berg
Jim Bertko	Bryan Boatright
James Brown	Mark Cranny
Darrin Davis	Tatyana Dhaliwal
Suhel Dhanani	Khoa Do
Michele Hardy	Daniel Haver
Ning Jaing	Zaheer Kasad
Susan Kersey	Kanapathipillia Ketheesan
Henry Lueng	Michael Licis
Otto Luedke	Charles Matsumoto
Martin Mollat	Delandra Navarro
Gregory Odell	D. John Oliver
Javier Parra	Tom Plachecki
Jung Pyon	Alberto Reyes
Steve Saddler	Raymond Smith
Carlos Valdivia	Joe West
Youngyut Yuenyongsgool	

Faculty:

Charles E. Backus	Samir M. El-Ghazaly
Shahrokh Hashemi-Yeganeh	

President:

Dr. Lattie F. Coor

Epsilon Beta's Financial Report

All figures in dollars.

Starting Balance	482.36
<b>Expenditures</b>	
Office Supply/Copies/Misc	368.38
Sporting Events/Food/Drink	294.73
Pizza Party/Drink/Tip	191.46
Resume Book	213.52
EE Forum	587.86
Initiation Banquets/Deposit	3615.28
Plaques/Awards	604.61
Breakfast Mixers	438.40
1990-91 Total Costs	6314.24
<b>Incomes</b>	
Stadium Cleanup	500.00
Fall Pre-registration	300.00
Collected Over-dues	600.00
ASASU Funding	300.00
Fall Initiation	1242.00
Fall Other Income (Broomball, etc.)	55.42
Fall Total Monetary Income	2997.42
EE Forum	910.00
Resume Book	200.00
HP28s Raffle	208.00
Newsletter Copying Cost Refund	52.14
Spring Initiation	2304.00
Spring Pre-registration	300.00
Spring Other Income	102.47
Spring Total Monetary Income	4076.61
1990-91 total monetary income	7074.03
Ending Balance (carry over)	1242.15

Annual Chapter Report  
Summary Sheet  
Epsilon Beta Chapter

	Fall 1990	Spring 1991
Number Active Members:	21	34
Number New Initiates:	17	36
Number Officer Meetings:	21	20
	(inc. summer)	(inc. X-mas)

Programs and Activities<sup>§</sup>:

Activity	New or Continued	Man-Hours	Fall/Spring/Both
Breakfast Mixers	Continued	350	Both
Initiation Ceremonies	Continued	450	Both
Pre-registration Peer Advisement	Continued	240	Both
Softball Matches & Picnic	Continued	240	Both
Officer Meetings	Continued	55	Both
General Meetings	Continued	360	Both
Guest Speakers @ General Meetings	New	110	Both
Broomball Matches & Happy Hours	New	380	Both
ERC Tours	New	190	Both
Tutoring	New	650	Both
Database Structure Set-Up & Update	New	85	Both
Newsletter Publications	New	95	Both
Fund-Raising & "Donation-Seeking"	New	640	Both
Palo Verde Nuclear Plant Tour	New	210	Fall
Electromagnetics Seminar	New	110	Fall
Stadium Cleanup & Pizza Party	New	220	Fall
Young Faculty Teaching Award	New	10	Spring
OASUEP set-up	New	25	Spring
Resume Book	New	70	Spring
Soccer Team (Formation & Game)	New	70	Spring
Adopt A Highway	New	280	Spring
Outstanding Member Awards	New	25	Spring
Pot-luck Party	New	140	Spring
Installation Phone-Line & Ans. Mach.	New	5	Spring
Elect. Engineering Forum	New	2100	Spring

Total ..... 7110

Submission Date: 5/5/91 President Epsilon Beta (signed): *Arya Polyan*  
Faculty Advisor Epsilon Beta (signed): *Thomas A. DeMassa*

<sup>§</sup> Please note that the man-hour figure represents the total time involved in executing the function.

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