

BRIDGE of Eta Kappa Nu

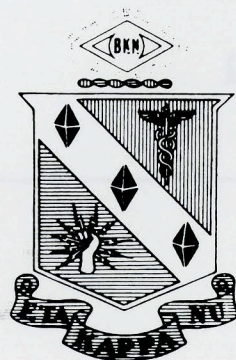


**JAIME ANN
MELANSON**

WINS

1998

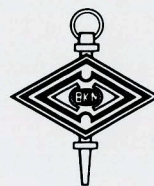
**NORMAN R. CARSON AWARD
AS
OUTSTANDING JUNIOR
IN ELECTRICAL ENGINEERING**



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August 1998
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The BRIDGE is published by Eta Kappa Nu Association, an electrical engineering honor society. Eta Kappa Nu was founded at the University of Illinois, Urbana, October 28, 1904, that those in the profession of electrical engineering, who, by their attainments in college or in practice, have manifested a deep interest and marked ability in their chosen life work, may be brought into closer union so as to foster a spirit of liberal culture in the engineering colleges and to mark in an outstanding manner those who, as students in electrical engineering, have conferred honor on their Alma Maters by distinguished scholarship activities, leadership and exemplary character and to help these students progress by association with alumni who have attained prominence.

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PAUL K. HUDSON HKN DEVELOPMENT FUND ANNUAL CAMPAIGN

Paul K. Hudson
1916-1988



Eta Kappa Nu Executive Secretary
and BRIDGE Editor,
1958-1988

Established by the Board of Directors in April 1992, this important fund will honor the memory of Paul Hudson, a devoted servant of HKN and a man who truly exemplified the qualities that "balance the bridge."

The Hudson fund, managed by the HKN Board of Directors, will be used to support the general development of Eta Kappa Nu. For example, the fund will be used where necessary to help support HKN's national award programs; expansion, including the development of new college chapters and alumni chapters; and chapter visitations by current and past national officers and directors to assist with special occasions. All of these examples represent activities which Paul so heartily endorsed. Other developmental projects will be considered by the Board as funding grows and new objectives important to HKN become established.

As we honor Paul, we also honor donors to the fund by recognizing them as Paul K. Hudson Fellows. Five levels of giving are recognized, as in the form below. One-time donations at any level will be gratefully accepted. In addition, donors may now make pledges for annual donations. All donations will be counted cumulatively for the purpose of establishing the donor's current level of giving. Fellows at each level will be recognized annually by name in the BRIDGE.

Eta Kappa Nu thanks those who have already become Paul K. Hudson Fellows. We invite all members and friends of HKN to join the growing list of Fellows. And whether or not you are presently a Fellow, consider extending your support of the Hudson Fund on an annual basis. Simply fill out and return the form below. Thank you for your part in supporting and strengthening Eta Kappa Nu.

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KAPPA XI

CHAPTER INSTALLED

at the UNIVERSITY OF SOUTH FLORIDA TAMPA, FLORIDA

by

Professor Thomas E. Wade

In November, 1997, a Member of the USF Professorial staff of the Electrical Engineering faculty contacted Dr. J. Robert Betten, Executive Secretary of Eta Kappa Nu International, concerning the possibility of forming a chapter of Eta Kappa Nu at the University of South Florida.

On January 12, 1998, the Electrical Engineering faculty unanimously approved the concept at its Spring Faculty Meeting. On March 19, 1998, the first formal organizational meeting of the new chapter was held with Professor Wade presiding. A description of the new organization was given and a petition was signed by student members present.

Officer elections were held at a second meeting on March 26 and April 11, 1998, and a formal request (which included 21 student signatures, letters of endorsement

from the University President, Provost, College Dean and EE Department Chair) was sent to Eta Kappa Nu Headquarters to establish an HKN Chapter at the University of South Florida.

On April 25, 1998, the new Kappa Xi Chapter was installed and 21 charter members were initiated. Robert F. Arehart, past International Eta Kappa Nu president, 1990-91, came from Philadelphia, PA to conduct the Initiation Ritual.

Dean Michael Kovac welcomed the new initiates and Electrical Engineering Department Chair Lee Stefanakos relayed his best wishes. The charter officers for the new chapter are as follows:

President:	John D'Amico
Vice-President:	Joseph Long
Recording Secretary:	Jason Sheplak
Treasurer:	Douglas Scratchley
Corresponding Secretary:	Terrance Allen
Bridge Correspondent:	Joey Duvall
Faculty Advisor:	Dr. Thomas E. Wade

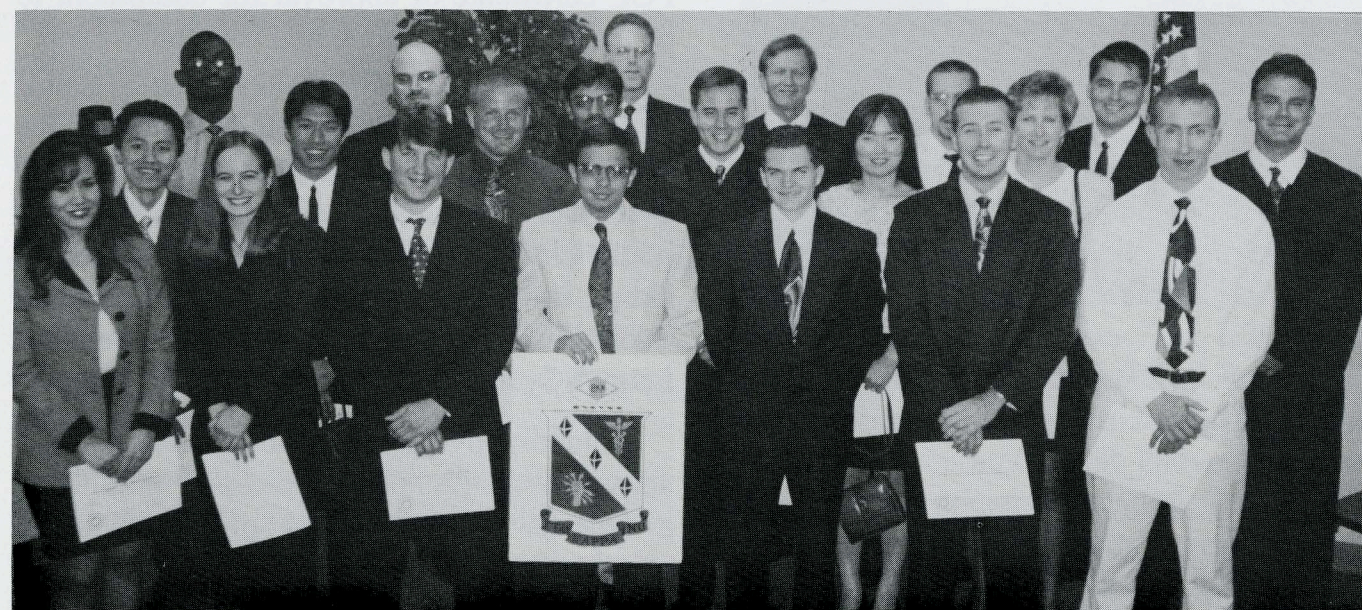
Charter members include Sameer Azad, Wayne Bomstad II, Wesley Caldwell Jr., Mark Chase, Brent Graham, Kayoko Hickman, Joseph Ollei, Kris Skowronski, Hung Vuong, Jennifer Ann Weed, Jonathan Werner, Chad Coates, Valerie Anne Olson, Han Li and Muhul Shah.

After the Ceremony, an Eta Kappa Nu Initiation Banquet was held in the USF Student Union which included parents, spouses, and friends. HKN's Past International President, Robert F. Arehart, gave an overview of Eta Kappa Nu; and Professor Wade provided a program entitled "A Touch of Creativity".



Kappa Xi Chapter of ETA KAPPA NU
Installation & Initiation Ceremony
April 25, 1998

Pictured (left to right): Robert Arehart, past international HKN President & Installing Officer; John D'Amico, Chapter President; Joey Duvall, Bridge Corr.; Joseph Long, Vice-President; Terrance Allan, Corr. Sec.; Douglas Scratchley, Treasurer; Jason Sheplak, Recording Sec.; Dr. Thomas Wade, Faculty Advisor.



Kappa Xi Chapter of ETA KAPPA NU
Installation & Initiation Ceremony
April 25, 1998

Photo of Charter Officers and Initiates

Al Gross

is
1998 Winner
of
Vladimir Karapetoff Eminent Members'
Award

by Nancy T. Hantman



Mr. Al Gross

Al Gross was the recipient of Eta Kappa Nu's Vladimir Karapetoff Eminent Members' Award during the annual recognition banquet in Princeton, NJ, on April 20. A senior staff engineer at Orbital Sciences Corporation, Mr. Gross is the seventh recipient of the award.

In presenting him with the certificate and honorarium, President John D. Wolf cited

his early and continuing development in personal wireless communications. He received the BSEE degree from Case School of Applied Science in 1939. After World War II, he formed the Citizens Radio Corporation, which produced two-way radios for public use; in 1948 the company received the first FCC certificate of approval for equipment to be used in a newly allocated frequency band.

Since then, Mr. Gross has been a senior engineer or member of the technical staff for several companies, including Parson-Peebles Electrical Products, Sperry Corp., Westinghouse Electric, GTE Communications System Corp., and AG Electronics. In 1991 he joined Orbital Sciences Corporation's Satellite Launch Systems Group.

Holder of five patents, Mr. Gross has been active in professional societies, notably as a founder and chairman of the Phoenix chapter of the IEEE Electromagnetic Compatibility Society, and the Phoenix chapter of the IEEE Aerospace and Electronics Systems Society. A Life Fellow of IEEE, he is also a Life Fellow of the Radio Club of America and a member of the American Institute of Physics and the Optical Society of America.

He is an Honorary Life Member of the World CB Union and European CB Federation and a member of numerous Citizens Band societies in Europe, including those of Italy, Ireland, the Netherlands, Germany, Switzerland, Austria, and the United Kingdom. He is also a member of the French Amateur Radio Association.

Among his many recognitions are a Department of Defense Commendation for aerospace research, a Presidential Commendation for contributions to the telecommunications field, the Virginia Polytechnic Institute and State University Centennial Award for his pioneering telecommunications work, the IEEE Centennial Medal, the prestigious Fred M. Link Award of the Radio Club of America, the IEEE Vehicular Technology Society Avant Garde Medal, and the IEEE United States Activities Board Professional Leadership Award. He was also awarded the Marconi Medal by the Veteran Wireless Operators Association and the Pioneer Award by the Personal Communications Industry Association.

In 1987 Mr. Gross was given the Japan Electronic Association Award, and he was named a Marconi International Fellow in 1989. In 1995 he was given honorary permanent membership in the International Telecommunications Union and a medallion to commemorate his contribution to mobile personal wireless communications.

He was introduced by Eric Schimmel, vice president of the Telecommunications Industry Association. Mr. Schimmel described Mr. Gross as an early riser, versatile, adaptable, and "tenacious as a hungry shark." Citing the April issue of Scientific American for its article on telecommunications history, Mr. Schimmel pointed out that Gross had made significant contributions to that history.

In his acceptance speech, Mr. Gross noted some similarities between early models of hand-held transceivers that he designed and built (several of which he had with him for display) and contemporary items. His use of ceramic printed circuit boards was of particular interest. The use of his equipment for enemy surveillance during World War II was detailed in a 1976 IEEE Spectrum article on the "Joan/Eleanor" project. In describing his postwar commercial hospital pager, he said that it was first ridiculed by potential customers, who claimed that it would interfere with everything from hospital routine to nurses' apparel.

The Vladimir Karapetoff Eminent Members' Award is given to an electrical engineering practitioner for career achievement. It recognizes that the recipient has distinguished him- or herself through an invention, development, or discovery in the field that has a major impact on society through the improvement of the standard of living, the public welfare, and/or global stability.

The award was established in honor and through the estate of Vladimir Karapetoff, a prominent member of Eta Kappa Nu and a Fellow of the IEEE. The fund to support the award was initiated through a bequest from Dr. Karapetoff's widow, R. M. Karapetoff Cobb, a chemical engineer. Dr. Karapetoff emigrated from St. Petersburg, Russia, in 1902. He became a U.S. citizen in 1909, and was a professor at Cornell University from 1904 until his retirement in 1939.

The Karapetoff award is administered by the HKN Eminent Members' Committee. Nominations are now being accepted for the 1999 award. For nomination forms or information, contact Donald Christiansen, Chairman, VKEMA, 434 West Main Street, Huntington, NY 11743; fax 516-385-4940.



JAIME ANN MELANSON WINS

1998 NORMAN R. CARSON AWARD AS OUTSTANDING JUNIOR IN ELECTRICAL ENGINEERING

by
Laureen K. H. Parker and Michael Schoenfelder
HKN Lone Star Alumni Chapter

Each year Eta Kappa Nu honors a junior in electrical engineering for his or her leadership abilities, scholastic and technical achievements, and service contributions. This award, the Norman R. Carson Outstanding Electrical Engineering Junior Award, was established by Mr. and Mrs. Carson to recognize the student's ability to lead, persuade, and influence the actions of others, as well as to recognize his or her diligence, intelligence and technical competence. The HKN Lone Star Alumni Chapter of Austin, Texas administers this award and received many outstanding applications. After

careful consideration, a winner, three runners-up, and six honorable mentions were selected.

The winner of the 1997-1998 Outstanding Junior Award is **Jaime Ann Melanson** from the Beta Xi Chapter at the University of Oklahoma. Runners Up are **David S. Brown** from Epsilon Beta Chapter at Arizona State University, **Joshua D. Friedrich** from Psi Chapter at the University of Texas at Austin, and **Pradeep Ramsaran** from Beta Pi Chapter at City College of New York.

Honorable Mentions go to **Raunak Chatterjee** from the Epsilon Beta Chapter at Arizona State

University, **Stephen P. Hatfield II** from Gamma Theta Chapter at the University of Missouri at Rolla, **Tracey Ho** from Beta Theta Chapter at Massachusetts Institute of Technology, **Stephanie L. Holean** from Nu Chapter at Iowa State University, **Timothy J. Martin** from Beta Nu Chapter at Rensselaer Polytechnic, and **Anthony J. Skraba** from Epsilon Chapter at Pennsylvania State University.

Eta Kappa Nu heartily congratulates each of the Norman R. Carson Outstanding Junior winners for their achievements and outstanding qualifications. We wish each the best in his or her future.

WINNER

JAIME ANN MELANSON, this year's winner, has been very active in student organizations while maintaining high academic achievements. Jaime has served as the Treasurer of Eta Kappa Nu and Vice-Chairman and Secretary of IEEE. Through the efforts that she and her fellow officers made, the attendance and activities of the IEEE chapter increased by at least 50% this year. She has also served as chairman of several committees for the College of Engineering's Engineers Club, the Society of Women Engineers, and the University of Oklahoma Student's Association. In addition, Jaime serves her university and community through Tau Beta Pi, Golden Key, Alpha Lambda Delta Honor Society, and Delta Gamma Sorority.

Jaime has been a member of the Oklahoma University College of Engineering Academic Misconduct/Appeals Board. In addition, she worked on the Oklahoma University Master Plan contractor selection committee, served as a student advisor for the Engineering Advising Forum, worked on the Oklahoma Blood Institute Appreciation Banquet, and served on the committee for the University of Oklahoma Student's Association Presidential Campaign. In the fall of 1996, she enjoyed a Semester at Sea Study Abroad Program and worked on the student newscast camera, video and sound crew. She has also served as an instructor in the IEEE sponsored Soldering School.

Jaime's contributions to her community are numerous. She has volunteered for the Oklahoma

Science Bowl for three years as scorekeeper and timer. She has worked in a soup kitchen, helped with a hayride and barbecue for the blind, sang Christmas carols at a retirement home, organized a "Kids and Seniors Valentine Party" at the Louisville Senior Center, cleaned up the highway, and worked to make the Carhop at Classic 50's and the Anchorsplash philanthropy events successful. She has also been a girl scout for twelve years. Her work experience includes two summers at Hewlett-Packard in the Measurement Systems Division, one summer at Spectralink, Inc. as a manufacturing assistant and soldering expert, five years as a lifeguard for the City of Louisville in Colorado, and a year as an electrical technician for Digital Audio Company in Louisville assembling and re-working prototype surface mount printed circuit boards for professional audio processing. After graduation, Jaime plans to attend graduate school and hopes to return to Hewlett-Packard. She is interested in designing and building systems that incorporate both hardware and software.

RUNNERS-UP

David S. Brown, from the Epsilon Beta Chapter at Arizona State University, is one of three runners-up for the Norman R. Carson Outstanding Junior Award this year. David has been a very active leader serving as captain and co-captain of several swim teams, the Texas Aquatics Swim Team, the Arizona State University Men's Swimming Team, and the Sun Devil Aquatics Swim Team. He was the first junior to be elected as co-captain of the University Swim Team.

His swim coach, Ernie Maglischo, feels that David's "support and enthusiasm has almost single handedly taken a team that showed little support and enthusiasm for their teammates during meets and turned it into a team whose cheering and support are among the best in the PAC-10." In addition, he has served on committees for Eta Kappa Nu and the Student Athlete Advisory Council.

David's interest in swimming and electrical engineering has led him to design and build an infrared transmitter and receiver that visually impaired swimmers can use to help negotiate turns in a race. It can be worn under a swim cap and can

be used instead of the helper who now alerts the swimmer with a tennis ball at the end of a pole to let him know that the wall is near.

In addition to swimming, David has been very active in community service. His many activities include peer advising, highway clean-up, HKN fundraising, blood drive volunteer, swim team fundraising, Texas Special Olympics volunteer, Habitat for Humanity volunteer, and Salvation Army volunteer.

After graduation, David would like to design electronic aids for handicapped athletes. It looks like he's well on his way.

Joshua D. Friedrich, from the Psi Chapter at the University of Texas, is a co-runner-up for the Outstanding Junior Award. During the spring of 1998, Joshua was Chair of the Corporate Relations Committee and the Engineering Council Delegate for Eta Kappa Nu. He increased HKN's corporate funding by over 200% while improving the members' exposure to representatives from the corporate world. As co-chair of the University of Texas College of Engineering EXPO, he was responsible for leading a group of twenty students that manage the \$75,000 career fair. Over 160 companies participate with 4,500 students attending.

As a junior, he mentored ten freshman students and in order to expand the program, he started an initiative to include other honor societies in the mentoring process. He has served as the Recording Secretary and Publicity Committee Chair of IEEE. As Relations Director of the Engineering Leadership Exchange, he coordinated corporate speakers for a leadership seminar and organized and facilitated a group discussion designed to set goals for the UT College of Engineering. His community involvement includes participating in Students United for Rape Elimination Program, Habitat for Humanity, UT College of Engineering canned food drive, tutor and grader, and hospital volunteer.

Joshua has worked as a Software Engineer at the Advanced Electrical Analysis Tools Division of IBM and as a Personal Computer Specialist at the Waldemar S. Nelson, Inc., Engineers and Architects. After graduation, Joshua would like to

work as a circuit designer for awhile and then return to complete an MBA program.

Pradeep Ramsaran, from the Beta Pi Chapter at City College of New York, is co-runner-up for the Outstanding Junior Award. He has served as President of Tau Beta Pi, Treasurer of Eta Kappa Nu, and Chairman of the Engineering Student Council. In addition, he has served as the President of the Triveni Cultural Organization, an organization aimed at cultural activities among youth originated from Trinidad. During his term, this organization won awards for outstanding achievements in story telling, poetry, essay writing, singing, and public speaking. His leadership style is described as "charismatic" and "dynamic" by Mr. Beharry, Counselor and Coordinator of Cooperative Education at City College.

With the SEEK Program (Seeking Education Elevation and Knowledge, a program for academically disadvantaged students), Pradeep has provided guidance, support, and tutoring to deserving students. He has also been very active in the Program for Retention of Engineering Students helping to motivate students to remain in college. This program received one of the ten National Science Foundation Presidential Awards nationwide for mentoring in 1997.

As a member of the Biomedical Engineering Students Association, he is an advocate for the promotion of Biomedical Engineering Studies at the City College of New York. In the community, he encourages youths in his neighborhood to pursue a college education and provides volunteer tutoring to peers and neighborhood children.

His work experience includes implementing and testing C code for use in Automatic Test Equipment used in military applications at Target Systems Technologies as well as engineering in Power Systems for General Electric.

Pradeep plans to pursue a Ph.D. in Electrical Engineering and a career in teaching and research at a university.

THE COMMUNICATION CONNECTION

by Jim Watson, President, Watson Associates

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This article first appeared in IEEE Potentials

Our world continues to provide many challenges, especially as we move from an industrial to an engineering age. Increases in the use of technology and electronic communication create a need for more personal contact and better understanding between technical and nontechnical groups.

For several years, books and publications have predicted events which create stress and uncertainty. Authors of these publications outline major changes which will impact our world. All indicate that the speed of change will continue to accelerate making it difficult to maintain a proper focus. This will have many implications for engineers and allied professionals.

Most engineers have the ability to analyze data and situations in a practical and logical manner and to discuss this information verbally or in written reports. In the future though, the need to effectively transfer technical information to larger, non-technical audiences will require greater communication skills.

For many engineers, the thought of giving a presentation to a large audience is distasteful. Although they may be well prepared for the speaking assignment, when the time actually arrives, they visualize a fate worse than death.

During the introduction, fears become reality. As they walk to that stage, their knees feel like rubber and their voice appears to have left them. When they peer over that protective wall called a lectern, many feel

they are experiencing a crisis.

To prevent this tragedy and to make use of every opportunity to be a successful speaker, engineers need "The Communication Connection." The best defense against the fear of speaking is being familiar with the topic and being adequately prepared by rehearsing the presentation.

Engineers are most comfortable when they are in control of their environment. Unfortunately, control of an audience must be earned. Because an audience can listen up to four times faster than a speaker can talk, there is opportunity for the audience to have extraneous thoughts during the presentation.

To be successful, a communicator must understand and use the principles of public speaking. This starts with the desire to be a good communicator. It requires the knowledge of effective speaking techniques and the willingness to adapt these to the personal strengths of the individual. An effective speaker will invest 25 to 30 times the amount of time involved in actually delivering a presentation to develop, rehearse and become completely familiar with information and visuals.

Principles of public speaking may be compared to an electric utility system. Electricity is produced in generation plants by converting raw sources of energy such as coal, uranium or falling water into a useful, finished product. Electricity is delivered from these central plants to customers by transmission systems.

The development of information for a presentation is similar to the process of producing electricity in a generation plant. A variety of sources can be used to assemble information into a useful, concise report.

Audiences may be compared to electric utility customers. Each customer has a different need for electricity. Each audience is different in their need for information. It is important to recognize different needs in both examples.

The presentation is similar to an electric transmission system. As metallic conductors are used to transmit energy, words and gestures are used to transmit information. Supporting structures are used to keep non-insulated wires from touching the ground to prevent the complete loss of electricity. Effective visual aids will assure that the message of the presentation is not grounded and lost before reaching the audience.

It is important for employees of a utility to properly plan and construct the electrical system to provide reliable and useful electric service for all customers. Successful presentations also require careful planning.

Many speakers focus on the development of the details of a presentation as soon as an opportunity to speak is identified. This is not recommended and is a sign of lack of experience. This would be like designing a transmission system before identifying electric customers, where they are located, and what specific energy needs exist in their facilities.

The first and most important step is to determine who will be in the audience, what are their needs, and how to communicate with them. If the speaker is unfamiliar with the audience, questions should be asked of the person arranging the meeting.

There are significant differences between small groups of co-workers who expect an informal meeting and a board of directors or senior management who expect a formal, concise, professional presentation. Business owners are interested in economic bottom line results. Physical workers are concerned about job security and how technology will

impact their future. Workshops require detailed discussions with audience participation. Preparing for longer programs usually requires several days of planning.

Perhaps the most difficult assignment is an after dinner presentation. The relaxing atmosphere of food and refreshments after a long day of work creates a challenge for any type of communication, especially if the lights are dimmed for visual aids.

Planning for a presentation should occur only after completing a careful audience analysis. Start the planning process early and allow sufficient time for development and rehearsal of the presentation.

Start with an outline of major points. Develop an effective structure to the presentation, arranging these ideas to create a logical flow of information. Continue the process by adding details to each section of the outline. Prepare introduction and summary sections after the main body of the presentation has been completed.

Select the type of presentation and visuals which will be most appropriate for the audience. Use major points of the outline to structure visuals. Rehearse by talking aloud and include information covered by each visual. Make sure the presentation will fit the allocated time. A general rule for time use during the presentation is to allocate 10% of the time for an introduction, 80% for the main presentation, and 10% for the summary.

There are a variety of designs used successfully by engineers in planning transmission systems. This is an indication that successful presentations can also include much variety. Avoid trying to copy someone else. It is more effective to determine personal strengths and build upon those strengths to develop an individual speaking style.

Reading a report or paper is one method of presentation that should usually be avoided. When speakers hide behind a lectern and read their paper word for word, the result will be boring and ineffective. If speakers have the courage to peek at the audience while reading, they will find that eyes are

closing, heads are nodding and eventually there may even be sounds of snoring.

How can this disaster be prevented? One very successful way is to design and deliver a presentation which will be interesting and usable to the audience. The less one relies upon his/her report or even written notes, the greater the chances will be for success. Well planned visuals provide excellent notes. Walking away from the lectern adds interest for the audience and demonstrates that the speaker is in control.

The use of properly selected and designed visual aids will multiply the effectiveness of the presentation. There are different types of visual tools from which to select. For small, informal groups, black boards, flip charts and video tapes are effective and involve audience participation. These visuals can be prepared before the meeting and provide an excellent outline for the discussion. Some of these visuals may not be effective with large or formal audiences. They are also difficult to transport and may require expensive equipment such as television monitors or projectors.

Overhead transparencies are effective with audience sizes up to 50 or 75 people. This visual system is inexpensive and flexible in terms of revising and rearranging for one or more presentations. Slides are excellent notes for the presentation and allow the speaker to add emphasis by writing on the transparency while it is on the overhead projector. Mounting overhead slides on cardboard frames offers additional space for written notes.

Overhead transparencies provide good support for presentations and can be used with a reasonable amount of light in the room. It is important to use HORIZONTAL formats, to limit the amount of information on each transparency and to make words large and clear. A large screen should be used for larger audiences.

There can also be disadvantages in using overhead transparencies. They are less effective with very large audiences. Overhead

projectors require more of the speaker's time and attention in manipulating the equipment. There are limitations in what can be placed on the transparency. The audience may be distracted while the speaker places the transparencies on the projector, and if the speaker is nervous, this will be magnified on the screen by the movement of the transparencies or a marking pen.

The use of overhead projectors limits the working space of a speaker during the presentation. If an assistant is used to place the transparencies on the projector, an added hazard of loss of synchronization between the speaker and assistant may exist. Also, the speaker is less free to write on the transparency under these conditions.

For larger audiences and more professional presentations, 35mm slides should be considered. Although these are more expensive and take longer to prepare, they are usually much more effective when projected on a large screen.

There are a few basic rules for the use of 35mm slides. Vertical slides should NEVER be used. If necessary, information should be broken into several slides and placed in a horizontal format. Most screens have greater width than height and the use of horizontal slides permits a full screen at all times.

Slides should not be too light, too dark, or too complicated. One of the most common mistakes is to clutter the slide with too much information or to select very detailed sketches, diagrams or other forms which are difficult for the audience to understand. This is often the case when a photograph is taken of typewritten sheets or diagrams. Adding color to a busy slide will not increase the legibility of the visual. Remember the KISS principle, KEEP IT SIMPLE. This is true for all visuals. The use of several simple slides will always be appreciated by the audience.

In addition to words and numbers, the use of color graphics will enhance visual presentations. Charts and graphs with properly selected colors are easily and quickly understood by the audience and the subconscious

mind tends to remember the graphic relationships. Background colors should be limited to black or dark blue. Use white and all capital letters for slide titles. Capitalize the first letter of each word and use yellow for the body of the slide. Other light colors can be used to add variety.

Many techniques are available in the preparation of 35mm slides. The use of computer graphics has opened a new source of graphic designs; however, care should be taken in photographing hard copy output of computers. Professional slides can be made in commercial slide shops. Although these can be effective for professional presentations, they usually cost between \$20 and \$50 each. Several days may be needed for preparation and it is difficult to make last minute corrections or changes.

An alternative to commercial slides is to photograph a PC screen. Keep the format simple and place the copy in the middle one-third of the screen. Typical camera settings for ASA 200 speed film are 1 second time exposure with stops between f8 to f16. A tripod should be used to hold the camera. A 70mm - 210mm zoom lens can be effective when set on 210mm and placed about 5 feet from the PC screen. The use of a matrix of capital letter "I's" is helpful to adjust the tripod for correct horizontal/vertical levels. Experiment with contrast and brightness settings on the screen and with the use of different f-stops.

The next, exciting step in visual aids is the use of multi-media equipment such as computer controlled 35mm projectors, interface systems which display computer screens on an overhead projector, and direct projection computer systems. It is important to follow format principles discussed with overhead and 35mm slides when using computers.

Because computer visuals offer a multitude of options, it is easy for the audience to focus on an **entertaining** delivery and miss the content of the message. Visuals should never become a barrier to the message. Preparing computer visuals can also be very

time consuming. The use of good judgment and a focus on the message will usually keep computer visuals in perspective. When properly used, visuals provide excellent notes for the speaker and result in professional presentations that deliver clear messages.

Engineers should review all media tools as they develop and lead the way in their use; however, not all corporations have modern equipment and it may or may not be available at public conference facilities. When multimedia systems are used, it is especially important to verify that the proper equipment is available and that it meets the requirements for the presentation. Murphy's law indicates that more sophisticated systems offer more opportunity for problems. It is best to arrive in time to carefully check all equipment before starting the presentation.

Even with good planning, audience analysis, and preparation of visual aids, mechanical or technical problems may surface during the presentation. Occasionally the room arrangement is not conducive for the audience to see the screen. Room lights may not be easily turned down. Microphones often will not operate properly. Projector bulbs can burn out during presentations. To prevent most of these problems, arrive early and check out as many systems as possible before the presentation. Remember, speakers are responsible for results and should arrange facilities to fit their needs.

One common problem in the use of 35mm slides is to find a slide upside down or in the wrong sequence. When this happens, speakers quickly lose their support system and may find that the audience will also leave, at least mentally.

This disaster can only be prevented by placing slides in a carousel tray, reviewing them before leaving for the meeting and transporting them to the meeting in the tray. Slides should be clean and in good physical condition or speakers will fall short of their goal to communicate effectively.

The purpose of making a presentation is to communicate. "The Communication Connec-

tion" has several important ingredients to assure success. Speakers should chart their course early, analyze their audience and prepare materials in time to permit adequate rehearsal before the presentation. Memorize IDEAS, not words, to be given during the first five minutes. To relax, take a few deep breaths just before moving to the lectern. Start the presentation by standing near the audience and not behind the lectern. Deliver initial ideas without notes and use visuals for notes during the presentation.

Continually analyze the audience during the presentation. Communication is very much like an electrical circuit. Electricity flows both ways in a circuit. During a presentation, communication flows both to and from the audience. Therefore, it is important to monitor the response of the audience while delivering a presentation. When signals indicate the audience is restless or bored, it is time to make changes in the delivery.

Voice levels and speed can be changed. Use style, humor, body language, and movement around the stage to add interest. Humor can be very effective but it also may have risks. Keep all humorous stories short and relate them to the presentation. Never use humor which could offend someone in the audience.

Proper use of visuals is one of the best methods of audience control. Adding cartoons and scenery slides increases interest. Practice the timing of key slides for greater emphasis. Place slides in a series to improve continuity and your ability to know what is coming next.

In some cases, emotion can be used in a presentation. It is very important to analyze the audience properly before the use of an emotional approach. Off color humor and X-rated slides are NEVER appropriate. A good rule is - when in doubt, leave it out.

One of the most important assets is the ability to remain flexible. If initial humor does not generate a positive audience response, minimize additional humor for that presentation. On the other hand, if the first humorous

anecdote brings a great round of laughter, it may be very effective to add more humor than originally planned.

Be flexible and use only the amount of time allocated for the presentation. It is not uncommon to be notified of a change in the time during the introduction. It is better to end early than to go over the time limit.

These ideas are designed to help engineers and other professionals in preparing for their next opportunity to stand before an audience. However, there is really no substitute for actual experience. Proper planning and practice are important, but your best teacher will always be gaining experience by taking advantage of all opportunities to give presentations.

IEEE and other professional organizations offer many opportunities to develop communication skills. Become active, volunteer to introduce a speaker, to chair a committee, to lead a discussion session or to give a presentation. Peer audiences are friendly and supportive, and experiences with professional organizations build confidence.

One of the best opportunities to be more successful in your career is to be an excellent communicator. This is valuable in one-on-one discussions, small groups and large audiences. The best method of overcoming those "butterflies" prior to a presentation is to be properly prepared. This is accomplished by analyzing your audience, taking an adequate amount of time to practice your presentation and by using visual aids effectively.

"The Communication Connection" can be an effective key to unlock future doors of opportunity. By following these simple methods, speakers will become better communicators and grow to enjoy their speaking assignments. The more experience one obtains, the more they feel relaxed and in complete control of the situation.

Remember, your future rests not only on the amount of knowledge you possess but also on your ability to clearly communicate information to others in an effective and useful manner.

AT THE SIXTY-SECOND ANNUAL AWARDS BANQUET

by **Ralph J. Preiss,**
Member OYEE Awards Committee

The sixty-second annual Eta Kappa Nu Awards banquet was held at the Princeton Marriott in Princeton, New Jersey on Monday, April 20, 1998. The evening was reserved to honor the Outstanding Young Electrical Engineer of 1997, Dr. Fabio M. Chiussi of Lucent Technologies, Holmdel, New Jersey, and the 1998 recipient of the Vladimir Karapetoff Eminent Members' Award, Al Gross, of Orbital Science Corporation, Chandler, Arizona. Chiussi was honored because he showed promise before his first ten years after his BSEE degree, and Gross for a proven career.

Also honored were six runners-up with promise, namely Dr. Ioannis Kanellakopoulos, University of California, Los Angeles, California and Dr. Jenshan Lin, Lucent Technolo-

gies, Murray Hill, New Jersey, who were recognized as Honorable Mentions; and Jean-Philippe Joseph, AT&T, West Long Branch, New Jersey, Dr. Kathleen S. Krisch, Bell Laboratories, Lucent Technologies, Murray Hill, New Jersey, Dr. Jose Luis Melendez, Texas Instruments, Dallas, Texas, and Anne Palmore Stublen, DuPont, Chambers Works, Deepwater, New Jersey who were recognized as Finalists. All except Ms. Stublen were at the banquet to receive their certificates in person.

In a separate article in this issue, the Karapetoff award and its recipient are described. The biographies of Drs. Chiussi, Lin, and Kanellakopoulos appeared in the May issue of THE BRIDGE. This article will cover the banquet and the biographies of those selected as Finalists.

Seated at the Karapetoff Award table, in addition to Al Gross were his wife, Ethel; his nominator, Eric Schimmel, with Mary Schimmel; Donald Christiansen, chairman of the Karapetoff Award Committee; John Henderson, Hitachi America, Ltd., 1977 Outstanding Young Electrical Engineer, and member of the Awards Organization Committee (AOC), and next year's chair with wife, Nancy; 1996 Honorable Mention, Frank Lane, Hitachi America, Ltd.; Fern Katronetsky, IEEE Corporate Activities, AOC Dinner Committee member; and Nancy Hantman, IEEE Spectrum, Karapetoff Award Assistant.

Members of the Board of Directors and their guests were sitting at two Eta Kappa Nu Board of Directors tables. At table one were Directors Richard Gowen, South Dakota School of Mines and Technology, with Nancy Gowen; Bob Arehart, PECO - Retired, with Helen Arehart; Robert Egbert, Wichita State University; Ronald Hoelzeman, University of Pittsburgh; Executive Secretary Robert Betten, University of Missouri-Rolla, with Connie Betten; also AOC member Ralph Preiss, IBM - Retired; and guest, John D'Arcy, Penn State University.

Seated at Board table two were Board President, John Wolf, Teledesic Corporation with Carol Wolf; Director Ronald Spanke, Lucent Technologies; AOC member and 1985 OYEE, Mark Adamiak, GE Protection and Control; OYEE Juror, Bruce Eisenstein, Drexel University; and guests Catherine Huang and Molly Tse, Drexel University Student Chapter.

Fabio Chiussi was seated at the first Lucent Technologies, Holmdel table. He was accompanied by Rowena Morrell and Vijay Kumar, his nominator from Lucent Technologies, together with Gretchen Kumar. Others from Lucent included Alope Gupta, Don Hirsch with Marilyn Hirsch, and William Proetta with Trisch Proetta.

Two other Lucent Technologies, Holmdel tables included Lucent colleagues Joe Kneuer with Terry; Victor Lawrence with Penny; Bryan Ackland with Barbara; Al Aho with Adrienne; and Kevin Grant, all at the first table. Colleagues Eileen Paulovich with Rudy; Andrea Francini; Santosh Krishnan; and Denis Khotimsky sat at the second.

Ioannis Kanellakopoulos was guest at the Sarnoff Corporation table hosted by Bob Bartolini, Sarnoff VP, and chair of the AOC, with wife, Janice. Other Sarnoff team members at the table included Mike McGrath, Robert Cordell with Angela Cordell, as well as 1988 OYEE Honorable Mention Michael Isnardi with his wife, Catherine. Joseph and Raymond Bordogna were also guests at that table.

Jim D'Arcy, Lockheed Martin, Past President of Eta Kappa Nu, was given the honor of introducing Ioannis Kanellakopoulos to the banquet instead of the nominator William J. Kaiser, as announced in the program brochure. Jim sat at the Lockheed Martin table; also colleagues Norman Gauss, 1997 OYEE Juror, with Margaret; James Melton; Shey Sabripour with Azin Sabripour; and guests Prof. Sohrab Rabii, Eta Kappa Nu faculty advisor, and Su Lynn Wong, Eta Kappa Nu Student President, both at the University of Pennsylvania.

At the first Lucent Technologies, Murray Hill table were seated Jenshan Lin with wife, Wenhsing. Also, Ran-hong Yan, his department head who introduced Dr. Lin at the banquet in place of the printed program-announced nominator, Young-kai Chen; Thad Gabara, Aon Mujtaba, Vance Archer, John Schafer, and Dawn-Marie Pettigano, all colleagues; also Lih Y. Lin and Evan L. Goldstein of AT&T Research Laboratories.

After the Karapetoff Award ceremony was concluded, Robert Bartolini, serving as Master of Ceremonies, called John D. Wolf, 1997-98 Eta Kappa Nu President, back to the podium to continue with the award presentations. He announced Jean-Philippe Joseph as the first

Finalist. Jean-Philippe was seated with his proud wife, Elizabeth, and two of his three sons, Vladimir and Ralph, at the AT&T table, together with one of his references, Russ Kurtz, and other colleagues, Edgarde Arty, Dennis Morgan, Dennis Reese, and Mick Stefanik. The table erupted into a loud round of applause as Jean-Philippe received his award certificate from Mr. Wolf.

Mr. Joseph was being honored for his outstanding work on reliable network design. His work is included in AT&T's SONET transport infrastructure to which he not only provided the analysis for trading off pumping lasers with erbium-doped fiber amplifiers, but also the restoration strategies for the new network architecture.

Jean-Philippe Joseph was born in Cap-Haitien, Haiti and received his Bachelors degree in Electronic Engineering as summa cum laude from the State University of Haiti in June 1987. He continued his studies at the Polytechnic University of Brooklyn, New York, receiving his MSEE in June 1990. Upon graduation, he joined AT&T Bell Laboratories, where, early on, he demonstrated excellent abilities to provide technical leadership and influence to interdisciplinary teams within AT&T. Despite his youth, his work with representatives of AT&T switched services established him as an expert in switched signaling protocols and private line services. This rare combination of expertise leveraged Jean-Philippe to a position providing technical leadership across an unusual wide range of projects. Thus, in 1991, he received both the AT&T Architecture Award and the AT&T Bell Labs Quality in Systems Engineering Award.

His other major contributions include his studies on ring-based vs. mesh-based restoration implementations, and his work on strategies for an ATM network to support a variety of quality grades of service depending on a customer's needs and willingness to pay the added expense.

Besides working for the company full-time, he spends his private time helping the local Haitian community by serving as mentor to Haitian students studying in American Universities with Haitian Government grants. He also lectures in his native Haiti and speaks eloquently about Haiti as part of Bell Labs Caribbean Club activities. He also lectures on the radio or personally to the Haitian community speaking English, French, or Creole, and acts as a translator for new immigrants. His interests include French literature and history, especially that of the French West Indian colonies, and the black slave revolution in Saint Domingue in the 18th century. At home, he passionately does handiwork and plays with his three boys, besides reading, jogging, or playing soccer when he is not surfing the World Wide Web.

The Master of Ceremonies then called the second Finalist, Kathleen Krisch to the podium to receive her certificate from Mr. Wolf. She was seated at the second Lucent Technologies, Murray Hill table. Also at that table were her nominator, Steve Hillenius with Barbara Hillenius; and colleagues John Trotter, Dave Eaglesham, Don Monroe, and Marty Green with Sharon Green. The applause was wholehearted as she returned with the Finalist certificate.

Kathleen was being honored for her having developed and optimized a range of techniques which improve CMOS device reliability, hot-carrier immunity, and boron-diffusion resistance by incorporating nitrogen into silicon dioxide layers to form oxynitride gate dielectrics.

She was born in Ann Arbor, Michigan and received her BS and MS degrees in electrical engineering simultaneously from the Massachusetts Institute of Technology in February 1988 and her Ph.D. from the same institution in February 1993. She started work at AT&T Bell Laboratories in November, 1992. As part of her work for the doctorate degree Kathleen

developed the theory for positive charge trapping in silicon dioxide from analyzing her experimental evidence. Her work at Bell Labs has continued along this line of experimental investigation coupled with theoretical understanding to explain the results. Recently, she has added another important area involving the measurement and understanding of substrate deterministic noise generated by digital circuits. A solution of this important problem is necessary for continued integration of sensitive analog circuits with digital logic.

Dr. Krisch has co-authored more than 10 journal publications and over 25 conference papers since 1989, thereby making the results of her research available to the semiconductor industry for routine work in CMOS and DRAM manufacturing and characterization. She has been invited to participate in many international conferences and discussions on industrial research and is active in the IEEE Semiconductor Interface Specialists Conference, the IEEE Electron Device Society, and the Materials Research Society.

While still in graduate school, Kathleen assisted in the development of a lecture set on microelectronics for high school teachers about recent technical advances. This desire to serve a broader community with her technical expertise has carried over into after-hour activities in her New Jersey community by working on the Regional Science Fair Organizing Committee, or volunteering to help renovate a building to be used for youth counseling and support.

Kathleen enjoys classical ballet... is still taking one or two lessons a week... hiking in the summer and fall, and downhill and back-country skiing in the winter. She also is a serious world traveler.

Dr. Bartolini next called Dr. Jose Luis Melendez from Texas Instruments in Dallas, the third Finalist, to the podium. Dr. Melendez had his own cheering section at the Texas Instruments table with C. Robert Helms, his nominator from Stanford University, T. R. Viswana-

than, Linda Megathlin and Nancy Pettus, all from TI, and Steve Chou, Princeton University, Douglass Washington, Johnson and Johnson, Stephen Leung and Dennis Lee, Rutgers University Eta Kappa Nu Student President and Vice-President respectively. Dr. Melendez is being honored for his development and marketing of the Surface Plasmon Resonance Integrated Sensor (SPRINTS) a miniature, fully integrated sensor capable of measuring real-time binding between biomolecules without the use of additional reagents. This device supersedes a laboratory instrument orders of magnitude more complex, larger in size, and considerably more expensive. SPRINTS is used today in industrial, academic, and government research and development groups around the world for applications as diverse as refractive index changes, avidin-biotin binding, antibody-antigen dissociation kinetics, thickness of insulators, refractive index of thin dielectrics, specific detection of small molecules, protein binding, concentrations of analytes, attachment of DNA complements, dissociation of thin films, and mixture proportions.

Jose Melendez was born at the Fort Dix Army Base in New Jersey and went on to receive straight A's at the Massachusetts Institute of Technology for his June 1990 BS degree in electrical engineering. He interned at Texas Instruments Central Research Laboratory while working for his MSEE degree at MIT in 1991, and the Ph.D. from Stanford University also in EE in 1994, becoming project manager of analytical sensors on his return to full-time work at TI. He has since been promoted to Branch Manager, one of the youngest at Texas Instruments.

In addition to having 9 patents pending and 16 disclosures in process, he has published over a dozen papers in refereed publications. He also volunteers his time to the Prevention Education Association, conducting motivational and educational training workshops for peer assisted learning and esteem building.

Convinced that cooperative efforts with university students had been important in his development, he devotes much time and effort to help fund cooperative projects between TI and other institutions, such as the University of Washington or the University of Texas.

Jose relaxes by playing racquet ball, table tennis, and basketball. At home, he enjoys playing the guitar for family and friends, and playing with, and teaching his toddler son to talk.

The fourth Finalist was not present to pick up her certificate. She is Anne Palmore Stublen, Dupont, Chamber Works, Deepwater, New Jersey. Ms. Stublen is being honored for her electrical safety activities. Partly as a result of her leadership in Dupont's electrical safety campaign, President Clinton designated May as National Electrical Safety Month in 1994.

She is currently very busy leading a team focused on electrical infrastructure improvements at a one-hundred year old chemical facility employing over 2,500 people and producing over 2,000 different products. Anne was born in Newport News, Virginia and received her BSEE degree from Virginia Tech in May 1991. She then joined Dupont Engineering and soon developed technical expertise in power systems, energy monitoring, electromagnetic field health effects and reliability technology such that she was readily recognized within the company and by her peer group outside, as a sound technologist and as a leader in her field.

She participated in Dupont's 1992 world-wide safety campaign, and was so successful that she was asked to lead it in 1993 and 1994, involving some 200 sites spread over 23 countries.

Besides presenting papers at the 1994 and 1995 IEEE Petroleum and Chemical Industry Conferences, she provided both technical input and documentation for DuPont's computer based electrical power system design and analysis software which is used worldwide by the company. She has been Vice Chair of the

IEEE PCIC Young Engineers Development Subcommittee since 1993 which is serving as a model for the IEEE Industry Application Society of which she is also a member. In addition she serves as the Meeting Coordinator of the IEEE Delaware Bay Section.

Anne Stublen volunteers some 10 hours a week to leading youth group activities in her church, the Girl Scouts, the Science Alliance and the Educational Resource Association, two Delaware State entities. She also mentors younger engineers within DuPont and has worked with young girls to introduce them to engineering careers. She is actively involved in crisis support services for families and unwed mothers. At home Anne enjoys gardening, decorative arts, cooking, and exercising.

The Master of Ceremonies continued calling on the two Honorable Mentions, who, upon being presented their certificates by John Wolf, responded with short messages. The ceremonies concluded with the honoring of the 1997 Outstanding Young Electrical Engineer. He was introduced by his nominator, Dr. Vijay Kumar, who pointed out that he knew that he had a remarkable man working for him, but only when he started filling out the OYEE questionnaire did he realize what an extraordinary renaissance man Dr. Chiussi really is. In his response, Dr. Chiussi said that he just wanted to try many things, and he was pleasantly surprised that he could master them all.

He then received the certificate and small engraved OYEE bowl from Mr. Wolf. Dr. Bartolini teased Dr. Chiussi by showing him his name engraved as the sixty-second name on the back of the large OYEE bowl which he could touch; but not take home with him. By tradition, the bowl is kept on display at the IEEE Headquarters Board room where all can visit it.

The Master of Ceremonies ended the proceedings by reading a special greeting for Dr. Chiussi and giving the enveloped letter to him.



At Top Left, 1998 HKN President John Wolf presents Winner's Certificate to Dr. Fabio M. Chiussi.

At Top Right, President John Wolf presents OYEE Honorable Mention Certificate to Dr. Ioannis Kanellakopoulos.

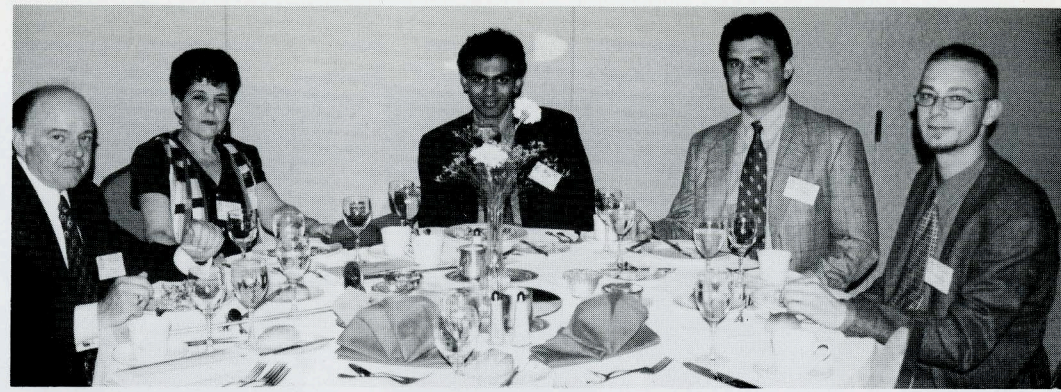


At Middle Left, Dr. Jenshan Lin receives Honorable Mention Certificate from President Wolf.

At Bottom, from left to right, President John Wolf, presents Finalist Certificates to Jean-Phillippe Joseph, Kathleen Krisch and Jose Luis Melendez.



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