

The



IEEE Newsletter

PUBLICATION OF THE NORTH JERSEY SECTION OF THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS

NJ Consultants' Network:

Marketing Ideas

Workshop

On February 24, 2005, the IEEE Consultants' Network of Northern NJ (CNNNJ) will host a workshop on Marketing Ideas. The speaker will be Peter K. Schutz, P.E.

About the Talk

Marketing is one of the things that technical consultants find the hardest to do. One of the primary functions of CNNNJ is to make the services provided by CNNNJ members visible and attractive to potential customers, for example, by the existing periodic mailing and through the web site. What other marketing efforts could CNNNJ make? We'll discuss our plans, but also ask what do consultants think is the most important thing that their prospective customers should be made aware of? Some examples:

- "Optimizing efficiency through use of technical consultants"
- "Using technical consultants to your advantage"
- "Proper use of consultants for small technology businesses"
- "How to find the right consultant"
- "Effective outsourcing"

Join our workshop and give us your ideas so that CNNNJ can provide you the best value for your membership dollars!

About the Speakers

The workshop will be led by Peter Schutz, Vice Chairperson of the CNNNJ executive committee. Peter is a mechanical engineer who has been working as an independent consultant for the last 20 years. He specializes in the development of new products, especially in the areas of medical and laboratory equipment, instrumentation, prototypes, and special machinery. Some of his areas of technical expertise include: electronics packaging, fluid systems, and thermal analysis. Peter has a BSME from Lehigh University and a MSME from NJIT. He survived his first year of consulting by eating rice. He has been a member of CNNNJ for the last 6 years.

All CNNNJ members and visitors are welcome to participate and help make this a successful program!

All Welcome!

Everyone welcome. No registration needed. Free admission.

About the Consultants' Network

Founded in 1992, the IEEE Consultants Network of Northern NJ encourages and promotes the use of independent technical consultants by business and industry.

Time: 7:30 PM, Thursday, February 24, 2005.

Place: Aeroflex/KDI-Integrated Products, 60 S. Jefferson Rd, Whippany, NJ. (Entrance at rear of building)

Information: For directions and up-to-date meeting status, call Robert Walker (973) 728-0344 or visit our website at www.TechnologyOnTap.org. To download a map to KDI, go to: <http://www.mcekdi-integrated.com/directions.htm>.

2006 IEEE Fellow Nominations

Deadline: 1 March 2005

Nominations are being accepted for the 2006 class of IEEE Fellows. For the second year, nominations, references and endorsements may be submitted electronically. The deadline is 1 March 2005.

At its June 2003 meeting, the IEEE Board of Directors approved changes to the process for nominating and electing IEEE members to Fellow grade. The change established a new nomination category for individual contributions, with the goal of increasing nominations for members in industry and encouraging nominations of application engineers or engineering practitioners who have made contributions of unusual distinction to the profession.

The board also established a Fellow Nomination Resource Center to help nominators locate the required number of references to support a nomination.

To nominate an IEEE senior member or to learn more about the Fellow program, visit www.ieee.org/fellows.

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IEEE NJ SECTION HOME PAGE

<http://web.njit.edu/~ieeenj/>

IEEE NJ SECTION NEWSLETTER HOME PAGE

<http://web.njit.edu/~ieeenj/NEWSLETTER.html>

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IEEE Service Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331, (732) 981-0060. It is not necessary to inform the North Jersey Section when you change your mailing address. "The IEEE Newsletter" and other section mailings use a list provided by IEEE's national headquarters.

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The North Jersey Section Executive Committee usually meets the first Wednesday (except holidays and December) of each month at 7:00 PM. Meetings are open to all members. For information on meeting agenda contact Secretary Russell Pepe at (201) 960-6796, rpepe@att.net.

NJ Computer and EMS Chapters: Scenario Planning Techniques for Dealing with the Forces of Convergence

On Tuesday, February 22nd, 2005, the North Jersey Chapters of the IEEE Computer and Engineering Management Societies will jointly host a presentation titled "Scenario Planning Techniques for Dealing with the Forces of Convergence" by Dr. Tom Oser.

About the Talk

This session addresses the merits and challenges of how technical leaders can use scenario analysis and strategic planning techniques to "make the business case" of technically strategic initiatives and align the directions of technology development and deployment with overall business strategy. Currently, CEO's, CFO's and other traditionally non-technical enterprise executives are becoming more technically savvy and aware. They understand and are acting on their understanding of the strategic role of technology in the company's overall strategy. But it is incumbent upon the technologists to also be more aware and savvy of the business issues, methods of business problem framing. They need to do so to effectively communicate the technical choices in a business context that will make the difference in guiding the business decisions.

The presentation discusses Strategic Planning Under Uncertainty (SPUU) as a method of scenario planning that accepts unpredictable futures as a premise, and builds upon the development of alternative future scenarios. These are taken into account in the process of strategy, planning and investment strategies and decision-making. Technology is considered one category of major forces that affect strategy and success of organizations, along with those related to society, economics, environment, and regulation/policy. Attendees will learn how broader strategic thinking through scenario analysis methods can help technologists to more effectively sit at the executive round table and affect the agenda and strategic decision-making processes of their organizations.

About the Speaker

Tom Oser is the Consulting Practice Leader for the Telecommunications, Technology and Media (TTM) industries at Decision Strategies International, Inc. He has a background in operations management and engineering in the telecommunications industry, as well as over a decade of consulting experience in

management and technology for Fortune 500 clients. His clients include companies spanning multiple industries, including financial services, healthcare, manufacturing, and pharmaceuticals, in addition to the core areas of TTM.

Prior to joining DSI, he provided strategy, marketing and management consulting services for early-stage technology companies in the venture capital and private equity markets. Also, as a Vice President Ernst & Young / Cap Gemini Ernst & Young, he served global clients in his role as a thought leader in the telecommunications practice and eCommerce consulting. He advised clients on strategy and planning with "a bias toward action" that drove clients beyond paper plans to timely execution of applied business solutions.

He was the founding director of the graduate studies program in Telecommunications Management as well as a member of the faculty at Stevens Institute of Technology. He has lectured on telecommunications, information systems and strategic management. He is a frequent speaker at national conferences and corporate client events. He currently lectures on IT Strategy at the Wharton/University of Pennsylvania Masters in Technology Management program. He earned a PhD in Computer & Information Engineering and a Bachelor of Engineering from Stevens Institute of Technology; MS in Telecommunications Systems from Southern Methodist University; MBA in finance and strategy from the Wharton School at The University of Pennsylvania. His hobbies include opera singing, skiing and boating.

All are welcome!

You do not have to be a member of the IEEE to attend. Bring your friends and network during the free pre-meeting buffet starting at 6 P.M.

Time: 7:00 PM, Tuesday, February 22, 2005 (pre-meeting buffet starting at 6:00 PM).

Place: Lucent Technologies, 67 Whippany Road, Room Number TBA, Whippany, NJ.

Information: Seth Jakel (973) 731 1902 (sgjakel@comcast.net), Vivek Shaiva (908) 229-6125 (vshaiva@computer.org), or Arthur Greenburg (973) 386-6673 (ahg1@lucent.com). Registration in advance is recommended with full name, affiliation and nationality so that an admission badge will be available for you on arrival.

IEEE North Jersey Section Activities

February 2005

Feb. 2 – “NJ Section Meeting”, 6:30 PM, “Executive Committee Meeting” - 7:00 PM, ITT, 100 Kingsland Rd, Clifton, NJ. Russell Pepe at rpepe@worldnet.att.net.

Feb. 9 – “Engineers Meet: American Engineering Alliance - A New Hope for the Engineering Profession” - NJ PACE & GOLD, 6:30 – 9:00 PM, Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ. Paul Ward, (973) 790-1625 (PWard1130@aol.com) or Richard F. Tax, (201) 664-6954 (rtax@AEA.org).

Feb. 10 – “Wireless Networking with Selfish Agents” - NJ Communications Chapter, 6:15 PM (refreshments at 6:00 PM), New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Dr. Nirwan Ansari (973) 596-3670 (nirwan.ansari@njit.edu) or check <http://web.njit.edu/~ieeenj> for the latest updates.

Feb. 15 – “Paper Submission Deadline for WOCC 2005” - 8:00 AM-5:50 PM, Wyndham Hotel, Newark, NJ. Dr. Hongya Ge, (973) 642-4990 (ge@njit.edu) or see <http://www.wocc.org> for additional details.

Feb. 22 – “Scenario Planning Techniques for Dealing with the Forces of Convergence” - NJ Computer and EMS Chapters, 7:00 PM (pre-meeting buffet at 6:00 PM), Lucent Technologies, 67 Whippany Road, Room Number TBA, Whippany, NJ. Seth Jakel (973) 731-1902, (sgjakel@comcast.net) or Vivek Shaiva (908) 229-6125 (vshaiva@computer.org).

Feb. 22-Apr. 19 – “Marketing Research” – North Jersey Section, Tuesday Evenings, 8 sessions, 6:30-9:00 PM, NJ International Bulk Mail Center, 80 County Rd, Jersey City, NJ. Bhanu Chivukula (b.chivakula@computer.org).

Feb. 23 – “Modeling and Simulating an Integrated, C4ISR On-the-Move, Networked System of Systems” – EDS/C&S, & MTT-S/AP-S Chapters, 7:00 PM (buffet at 6:15 PM), NJIT, 202 ECE Center, Newark, NJ. Dr. Richard Snyder (973) 492-1207 (RS Microwave) or Dr. Edip Niver (973) 596-3542 (NJIT).

Feb. 24 – “Marketing Ideas Workshop” - NJ Consultants' Network, 7:30 PM, Aeroflex/KDI-Integrated Products, 60 S. Jefferson Rd, Whippany, NJ. Robert Walker (973) 728-0344 or www.TechnologyOnTap.org.

Upcoming Meetings

Mar. 2 – “NJ Section Meeting”, 6:30 PM, “Executive Committee Meeting” - 7:00 PM, ITT, 100 Kingsland Rd, Clifton, NJ. Russell Pepe at rpepe@worldnet.att.net.

Mar. 8 – “North Jersey Spring 2005 Student Presentation Contest” - NJ Student Activities Committee, starting with dinner at 5:30 PM, FDU, room TBD, Teaneck, NJ. Amit Patel (a.j.patel@ieee.org).

Mar. 31 – “Online Business Development and Management - If you build it, they will come. BULL!” - NJ Consultants' Network, 7:30 PM, Aeroflex/KDI-Integrated Products, 60 S. Jefferson Rd, Whippany, NJ. Robert Walker (973) 728-0344 or www.TechnologyOnTap.org.

Apr. 22-23 – “The Fourteenth Wireless and Optical Communications Conference” - 8:00 AM-5:50 PM, Wyndham Hotel, Newark, NJ. Dr. Hongya Ge, (973) 642-4990 (ge@njit.edu) or see <http://www.wocc.org> for additional details.

May 1 – “NJ Section Awards Reception” - 3:00 to 6:00 PM at the Birchwood Manor, 111 North Jefferson Rd, Whippany, NJ. Anne Giedlinski (973) 377-3175.

Members and Non-Members Welcome
PLEASE POST

NJ EDS, C&S & MTT-S/AP-S
Chapters:

Modeling and Simulating an Integrated, C4ISR On- the-Move, Networked System of Systems

On February 23, 2005, the IEEE NJ Section Electron Devices, Circuits and Systems Chapters together with MTT/S/AP-S and the New Jersey Institute of Technology will host a talk on "Modeling and Simulating an Integrated, C4ISR On-the-Move, Networked System of Systems." The speaker will be Dr. Barry S. Perlman.

About the Talk

The mission of CERDEC, Ft. Monmouth is to develop and integrate Command, Control, Communications, Computers, Intelligence, Surveillance, Reconnaissance (C4ISR) Technologies that enable Information Dominance and Decisive Lethality for the Networked Warfighter. An important component of this mission is modeling and simulating the performance of electronics (e.g. Microwave/RF, Analog and Digital) in a tactical battlefield environment. Modeling and simulating a large-scale C4ISR system of systems (SoS) is essential and critical to perform 'what if' experiments in support of network centric warfare (NCW). The scope of this mission is diverse including large scale, multiple coupled domains. The magnitude, complexity, and importance of C4ISR requires the use of HPC to generate data sets that allow us to do the Constructive, Virtual and Live (C/V/L), analysis, test, and experimentation on a SoS scale. Historically, CERDEC has been involved in the use of HPC and has had outstanding support since 1993 from the DoD HPCMO and their outstanding HPC physical assets. Use of HPC to support analysis and simulation of the electronic battlespace has been underway as part of the HPCMO's CHSSI effort with two programs, specifically the CEN (Computational Electronics and Nanoelectronics) CTA and EBE (Electronic Battlefield Environment) portfolio. This work has allowed the parallelization of many serial M&S tools thus permitting HPC assets to come into play and approach real time in their execution. CERDEC together with its service partners, NIWA, AFRL and SPAWARS has been an early and consistent supporter and proponent of this strategy. This has led to groundbreaking results. Some examples include high fidelity models of complex

antennas using advanced finite element and hybrid CEM, high fidelity RF propagation and channel modeling using parabolic wave and asymptotic techniques and the mitigation of co-site interference effects using multi-resolution time domain techniques. In all cases the objective was and remains achieving interactive and real time utilization of HPC assets to enable intelligent preparation of the C4ISR battlespace. This work continues today thru the auspices of the HPCMO as part of EBE in the area RF mission planning and parallel Network Simulation, e.g. EBE-4 and EBE-5 respectively. Current EBE portfolio work is critical to two RDECOM STOs, CERDEC's COMPOSER and RDECOM SOSI's MATREX which will be key to successful C4ISR on the move, and its application as an enabler to the Current and Future Force. Complementary modeling and simulation includes nanoelectronics, physics based RF/microwave devices, circuits, including antennas, sensors and intelligent subsystems, communication networks and operational modeling and software for C2 applications. Research continues to accurately represent C4ISR technologies and phenomena across the spectrum of fidelity and operations, and the appropriate insertion of those representations in the C/V/L experimentation space.

About the Speaker

Dr Barry S. Perlman is an Associate Director for Technology and DARPA and HPC Programs at U.S. Army CERDEC/RDECOM, Fort Monmouth, NJ. His focus and mission is to develop and leverage advanced technology to support the force in the integrated C4ISR arena. Dr. Perlman currently provides leadership and oversight management and liaison to many HPC and DARPA programs supporting Army requirements. Most notably has been his support to the manager of the DARPA FCS Communication program. Results of this on-the-move communications effort, including live experimentation and validation at Lakehurst and Ft. Dix, NJ, have been incorporated into various facets of the current C4ISR strategy and its implementation. Current requirements include wearable antennas and antenna placement optimization studies which again drive/require HPC utilization. Current CERDEC facilities include a System of Systems Lab and a C4ISR on the move Test Bed at Fort Dix, NJ as well as a local Linux Beowulf cluster and a Origin 2000 platform.

All Welcome!

You do not have to be a member of the IEEE to attend.

Time: 7:00 PM, Wednesday, February 23, 2005. Free buffet will be starting at 6:15 PM.

Place: New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Directions are available at <http://www.njit.edu>.

Information: Dr. Richard Snyder (973) 492-1207 (RS Microwave) or Dr. Edip Niver (973) 596-3542 (NJIT).

Princeton Engineer, Inventor Becomes IEEE-USA President, Cites Innovation and Offshoring as Major Concerns

Washington (6 January 2005) -- Dr. Gerard A. Alphonse of Princeton, NJ, an IEEE Fellow who holds more than 50 U.S. patents, became IEEE-USA president on New Year's Day.

One of Alphonse's major goals is for IEEE-USA to tackle issues relating to innovation and offshore outsourcing (offshoring). He hopes to bring together technical workers and key stakeholders from government, industry and academia to advance equitable solutions to the transfer of high-value, high-wage jobs overseas.

"It's more than just a jobs issue," Alphonse said. "Even more fundamental is how the United States and other nations will ensure their economic prosperity, national defense and standard of living in an increasingly competitive, technology-based global economy. Success requires that the United States be more productive and innovative than our competitors.

"My goal as IEEE-USA's 2005 president is to make sure key decision makers are aware of the needs of the U.S. technical workers who are responsible for that technological innovation."

Alphonse is a founder and senior vice president of advanced technologies for Medeikon Corp., a developer of optical technology for medical diagnostics and therapy in Ewing, NJ. For 43 years beginning in 1959, he worked in a broad range of technical areas for the Sarnoff Corp., formerly RCA Laboratories. He was awarded four RCA/Sarnoff Technical Achievement Awards.

In 1986 Alphonse invented and demonstrated the world's highest performance superluminescent diode. The device is a broadband semiconductor light source and key component of next-
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generation fiber optic gyroscopes, low coherence tomography for medical imaging, and external cavity tunable lasers with applications to fiber optic communications.

Alphonse taught in the Electronic Physics Department at La Salle University's evening division in Philadelphia from 1967-82. During his last four years, he served as department head and also taught electrical engineering courses in linear systems, communications and microwave theory at the College of New Jersey in Ewing. He was appointed a consultant to the National Science Foundation for a two-year term in 1975.

Alphonse began his IEEE volunteer career in the 1960s as secretary/treasurer of the Princeton Central Jersey Section, and became Section chair in 1970. He has worked on numerous IEEE committees and boards, and in 2002-03, served as Region 1 director and member of the IEEE Board of Directors. Alphonse is a member of the IEEE Lasers and Electro-Optical Society and was elected to the board of the IEEE Engineering Management Society in 2003. He received an IEEE Millennium Award in 2000.

Alphonse, who speaks four languages, is a native of Haiti who came to the United States as a college student in 1954 at age 18. He arrived with two suitcases, one for books and one for clothes, and lived in a New York University dormitory for four years. Alphonse earned his bachelor's and master's degrees in electrical engineering from NYU in 1958 and 1959, respectively. He added a doctorate in electrophysics from Brooklyn Polytechnic Institute in 1967.

The author or co-author of more than 120 technical papers, Alphonse is a member of the Eta Kappa Nu, Tau Beta Pi and Sigma Xi honorary societies and the Science & Art Committee of Philadelphia's Franklin Institute.

For more on Alphonse's vision for IEEE-USA, see <http://www.ieeeusa.org/communications/presidentcolumn/Alphonse/alphonsejan05.html>.

Gerard A. Alphonse - 2005 IEEE-USA President

President's Column, January 2005

Greetings to all. It is a great honor for me to have the opportunity to serve you as 2005 IEEE-USA president. I am pleased that we have a dedicated group of volunteers serving on the IEEE-USA Board of Directors, its Operating Committee, and the 20-plus committees under the four IEEE-USA vice presidents, as well as a talented and dedicated staff to carry out our programs. We hope to implement some outstanding programs this year.

Over the past several years, we have witnessed worldwide workforce shifts due to the pressures of globalization. Technical workforce issues, offshoring and guest worker visa abuses remain difficult problems. We seek a balance between the need of U.S. workers and engineers to preserve their jobs, and the need of industry to access the talent pool necessary to sustain economic growth. We seek fair treatment for H-1B visa holders, while also seeking to prevent employer abuses of the H-1B and L-1 programs.

We plan to gather major stakeholders from government, industry and academia, and technical workers to look at innovation and offshoring in an effort to discover equitable solutions that satisfy the needs of all parties. Such solutions could include increased R&D to maintain the U.S. technological lead, and incentives for companies that reinvest in their U.S. operations and workforce.

A recent Boeing Co. paper, "Ensuring Workforce Skills of the Future: The Birth to Work Pipeline," perhaps best summarized the challenge offshoring presents to the United States: "As globalization drives businesses to create relationships that take advantage of human and capital resources without respect to borders, how will individual nations ensure their economic stability, national defense, and standard of living for their own citizens?"

We hope our innovation and offshoring forum can help to answer this question. To ensure the forum's success, I have appointed a steering committee that has already begun to develop plans and make contacts with key members of Congress.

I want to promote a stronger relationship between IEEE-USA and the IEEE Regions and Sections outside the United States. For more than 30 years, IEEE-USA has developed programs to serve the professional needs of the IEEE's U.S. members. These programs are numerous and include services such as salary surveys, job search programs, career activities and educational and

training programs, as well as programs to promote and support legislation for the benefit of society. Many of these services are generic to engineering communities everywhere in the world. Last year we initiated efforts to share our professional activities know-how with the IEEE worldwide. I intend to continue this outreach in 2005 in the hope that all IEEE members will benefit.

The IEEE Sections Congress will bring IEEE delegates from all over the world to Tampa, Fla., in October. We are working with Sections Congress planners on sessions and speakers in which delegates can discover parts of our programs they can model and adopt.

At the first IEEE-USA Operating Committee meeting this month, we plan to refine our high-priority activities for the year, including updating our strategic plan to align it with the IEEE's strategic goals.

IEEE-USA will continue to be your voice in Washington on career and technology policy issues, lobbying Congress to protect U.S. innovation and cyber-security, and providing federal lawmakers and Cabinet departments with advice and guidance. We will also continue our Congressional Advocacy Recruitment Effort (CARE) to facilitate your communication with your state representatives and those on Capitol Hill.

To learn more about what IEEE-USA is doing for you, please visit our Web site (www.ieeeusa.org), and don't hesitate to share your thoughts with me at galphonse1@comcast.net.

NJ Communications Society: **Wireless Networking with Selfish Agents**

On February 10, 2005, the IEEE North Jersey Section Communications Society Chapter along with NJIT will host a presentation on "Wireless Networking with Selfish Agents." The speaker will be Dr. Li (Erran) Li.

About the Talk

Traditionally wireless network protocols and architectures have been designed under the assumption that end users and network entities are cooperative. However, as wireless networks get more and more decentralized and pervasive, networking solutions must include and cope with entities who want to optimize their own utilities. We model these entities as selfish agents or players in game theory. In this talk, I will show how spectrum access can be made more efficient by the involvement of selfish agents in both 3G wireless networks and WiFi networks.

Dr. Li will first present an architecture and protocol that allows 3G service providers to host efficient content distribution services. In this architecture, contents are offloaded to ad hoc networks composed of 3G subscribers. This alleviates the demand of 3G wireless spectrum from content distribution. Since the participants of this data distribution network act as selfish agents, we model caching as a market sharing game. We show that the selfish behavior of computationally bounded agents results in outcomes that are bounded within 50% of the social optimal.

Dr. Li will then present mechanisms for efficient spectrum sharing in WiFi networks. Each access point (AP) in a WiFi network must be assigned a channel for it to service users. There are only finitely many possible channels that can be assigned. Moreover, neighboring access points must use different channels so as to avoid interference. Channel conflicts among APs operated by different entities are currently resolved in an ad hoc manner or not resolved at all. We view the channel assignment problem as a game, where the players are the service providers and APs are acquired sequentially. We consider the price of anarchy of this game, which is the ratio between the total coverage of the APs in the worst Nash equilibrium of the game and what the total coverage of the APs would be if the channel assignment were done by a central authority. We provide bounds on the price of anarchy depending on assumptions on the underlying network and the type of bargaining allowed between service

providers.

About the Speaker

Li (Erran) Li received the BE degree in Automatic Control from Beijing Polytechnic University in 1993, ME in Pattern Recognition from Institute of Automation, Chinese Academy of Sciences in 1996, and PhD in Computer Science from Cornell University in 2001, respectively. During his graduate study at Cornell University, he worked at Microsoft Research, Bell-Labs Lucent as an intern and AT&T Research Center at ICSI Berkeley as a visiting student. He is presently a member of the Networking Research Center in Bell Labs. His research interests are in networking with a focus on wireless networking and mobile computing.

All Welcome!

You do not have to be a member of the IEEE to attend. Bring your friends.

Time: 6:15 PM (refreshments start at 6:00 PM), Thursday, February 10, 2005.

Place: New Jersey Institute of Technology (NJIT), Room 202, ECE Center, Newark, NJ. Directions are available at <http://www.njit.edu/University/Directions.html>.

Information: Dr. Nirwan Ansari (973) 596-3670 (nirwan.ansari@njit.edu) or check <http://web.njit.edu/~ieeenj> for the latest updates.

NJ Section PACE & GOLD:

Engineers Meet:

American Engineering Alliance - A New Hope for the Engineering Profession

On Wednesday, February 9, 2005 the North Jersey Section Professional Activities Committee and Graduates of the Last Decade will host a meeting with officers and representatives of the American Engineering Alliance (AEA).

They will provide an introduction and answer questions. See www.aeworld.org/ for pre-meeting information.

About the Meeting

Not just another engineering organization. A preview of www.aeworld.org/ will prepare you for the introduction and give you an idea of their depth and capabilities.

Our speakers will be Salvatore R. Galletta, and Louis Comunelli. Both are Founding Members and officers of AEA.

Subjects of the meeting will be AEA's Purpose, Objectives, Plans, Membership, Jobs, Action, and more.

This event is especially of interest to students, recent graduates and those looking for a career and support for their profession.

You are encouraged to attend and invite your associates.

About the Speakers

Salvatore Galletta, is a professional engineer licensed in NY and CA. He has been practicing engineering for over 30 years. His extensive experience in the design and construction of major Civil Engineering projects includes airports, roads, high rise buildings and industrial structures.

Mr. Galletta is a graduate of Columbia University where he received a BS and MS in Civil Engineering.

His dream is to see a unified engineering profession serving the public and being duly recognized and respected by it. Mr. Galletta is totally dedicated to elevating the role of the engineer in our society not only because it is beneficial to the engineering profession but also because an active, engaged, and influential engineering profession is essential to the viability and long term interests of our country.

Lou Comunelli has practiced Engineering for over 37 years. He graduated with a Bachelor of Engineering Degree from The City College of New York, and is currently registered as a Professional Engineer in NY, NJ, CT and PA

He is currently working as a Project Engineer for a private Consultant firm, after serving 27 years in Civil Service for the New York City and New York State Departments of Transportation.

His goal is to unite engineers from all disciplines. "AEA was founded with the intent to transform the Engineering Profession in this country."

All Welcome!

Members and students from other professional societies and engineering disciplines are always welcome. We now include members from IEEE, ASME and AEA. For more information about these groups see:

www.aeworld.org/
www.aea.org/chapters/nj/
www.ieeeusa.org
web.njit.edu/~ieeenj/
www.asme.org/sections/northjersey

Time: 6:30 to 9:00 PM, Wednesday, February 9, 2005. Refreshments will be served.

Place: Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ, (973) 772-5500.

Information: Paul Ward, (973) 790-1625 (PWard1130@aol.com) or Richard F. Tax, (201) 664-6954 (rtax@AEA.org).

North Jersey Spring 2005 Student Presentation Contest

The new spring-05 student presentation contest is coming up! The North Jersey Section will be holding a presentation contest scheduled for early-March of 2005. This contest has been held in years past and its overwhelming success in generating student participation and interest make it an fantastic event for up and coming engineers. This year's contest will feature similar prizes (\$\$\$) and have graduate and undergrad categories.

The main focus of the presentation contest is to give students an opportunity to sharpen their communication skills, and help prepare for real life situations as practicing engineers and researchers. Additionally, the North Jersey Section contest provides an excellent chance for students to practice for the Region I Student Paper contest in the spring.

The contest at the North Jersey Section level is also supplemented by awarding cash prizes to the three best presentations in both graduate and undergrad categories. All engineering students are encouraged to participate in submitting team or individual presentations on any project work related to engineering. This local contest does NOT require students to write a full paper, just a slide-based presentation on technical or non-technical work is sufficient. Senior design projects, lab projects, personal engineering hobbies, engineering policy etc. are great topics to submit. Moving onto the regional contest requires submitting a short written paper.

The details of contest rules, judging criteria, viable topics for presentations, and abstract form will be same as last year. Also if you would like to get an idea of what topics would be appropriate or how you can prepare your abstract, take a look at winners from past years at the NNJ IEEE SAC homepage.

This year's North Jersey Section Contest will be open to graduate and undergraduate students and first/second/third place prizes will be awarded in each category of \$100/\$75/\$50. **All participants MUST REGISTER by submitting an abstract by filling in the form available at the SAC website to qualify as a contest participant.**

Time: Tuesday, March 8, 2005, starting with dinner at 5:30 PM.

Place: FDU, Teaneck, NJ (free parking available), room TBD. http://www.fdu.edu/visitorcenter/directions/teaneck_map.html.

Information: Questions can be emailed to the contest organizer, a.j.patel "AT" ieee.org and check out the website: http://ewh.ieee.org/r1/north_jersey/sac

IEEE-USA Needs Help!

Early this year, Congress will begin debating legislation that could profoundly effect American engineering professionals.

We Need IEEE Members to Come to Washington on March 8th and 9th to Help Us Defend Your Profession!

IEEE engineers face an unprecedented challenge, and an equal opportunity, this year. Done right, pending legislation could strengthen America's long-term competitiveness and prosperity. Done wrong, these proposed reforms could undermine job opportunities and retirement security for many American professionals, including engineers and scientists. It all depends on what Congress decides to do.

Among the many important issues that Congress will debate this year the most important for engineers include proposals to:

- ✦ Expand the country's temporary work visa program. Although it will target low-skill workers, this proposal could substantially increase the number of temporary visas available for foreign professionals.
- ✦ Partially privatize Social Security and strengthen the nation's defined pension system.
- ✦ Change the processing of visas international students need to study in the U.S. Some proposals would make the student admissions process more restrictive. Others will expedite student admissions.
- ✦ Make it easier for foreign engineers and scientists to become permanent residents of the U.S.

IEEE-USA will be working aggressively to protect the interests of IEEE members, but we can't do it alone. We need help from individual IEEE members who are concerned about the future of their profession.

On the afternoon of March 8th, 2005 we invite all concerned engineers to meet us on Capitol Hill for an intensive training session on key professional careers issues. Then on March 9th, you will visit with your legislators to discuss the state of engineering in America and practical ways Congress can improve it.

All IEEE members in Regions 1 – 6 are encouraged to participate, including students and retired engineers. No experience is necessary. All you need is a willingness to try to make the country better. IEEE-USA will provide you with background on pending legislation and tips on holding successful meetings with members of Congress. IEEE-USA held a very successful similar event last year. Only two of the participants had ever met a lawmaker before, yet all were able to

successfully communicate personal concerns and practical recommendations to their legislators.

More information on the 2005 IEEE-USA Careers Fly-In, including how to register, can be found here: www.ieeeusa.org/policy/Careerflyin. Limited support for a few IEEE members from key legislative districts will also be available.

Questions? Contact Vin O'Neil or Russ Harrison at (202) 785-0017 or e-mail Russ at r.t.harrison@ieee.org.

The NJ Section Education Committee Requests Your Feedback

The IEEE North Jersey Section has been helping fellow engineering professionals for the last fifty years. The Education Committee has successfully conducted software and engineering training courses over the last few decades. The Committee is committed to professional development of the members and the instructors for the courses are very qualified and experienced in their respective fields. Classes are arranged on weekday evenings or on Saturdays provided at least fifteen candidates are available. Completion certificates are issued by IEEE Headquarters with CEU credits for the number of training hours.

Due to the slow growth of the economy and several other factors, registration for these courses has diminished over the last few years. I would urge members to send their feedback regarding what courses they would be interested in, the format, location, and day/time, etc., by email to b.chivakula@computer.org.

Regards,
Bhanu Chivukula
Chair, Education Committee
Vice Chair, IEEE North Jersey Section

NJ Consultants' Network:

Online Business Development and Management

“If you build it, they will come” BULL!

On March 31, 2005, the IEEE Consultants' Network of Northern NJ (CNNNJ) will host a talk on “If you build it, they will come. BULL!” The speaker will be Richard A. Feldman.

About the Talk

Whoever told you that if you build a website you'll have a constant traffic flow and you'll generate sales or leads 24 hours a day, 7 days a week lied!

Internet traffic flow and sales requires a careful understanding of how to influence prospects and draw them away from competitive sites, convert your visitors into purchasing clients and entice them into repeat business.

Generating leads and calls for consultants are no different from generating product sales. The ways and means are identical because people are people, buyers are people, clients are people and no matter what needs to be generated, the generator has a vested interest in producing more of it.

About the Speaker

Mr. Richard A. Feldman represents Special Graphics, an agency known for its work in direct mail, consumer product packaging, trade show display, and publicity. A consultant in his own right, Mr. Feldman draws on his current success in online business development for one of his clients, USHC®, an online consumer product marketer, to illustrate how to harness the power of the pay-per-click world and use the internet as a powerful leads and sales generator. Additional information can be found by visiting the agency's website at www.specialgraphics.com.

All Welcome!

Everyone welcome. No registration needed. Free admission.

About the Consultants' Network

Founded in 1992, the IEEE Consultants Network of Northern NJ encourages and promotes the use of independent technical consultants by business and industry.

Time: 7:30 PM, Thursday, March 31, 2005.

Place: Aeroflex/KDI-Integrated Products, 60 S. Jefferson Rd, Whippany, NJ. (Entrance at rear of building)

Information: For directions and up-to-date meeting status, call Robert Walker (973) 728-0344 or visit our website at www.TechnologyOnTap.org. To

download a map to KDI, go to: <http://www.mcekdi-integrated.com/directions.htm>.

IEEE-USA Provides \$50,000 to Support Engineering Public Awareness

Washington (30 December 2004) -- Three programs designed to promote public awareness of engineers and engineering received \$50,000 from the IEEE-USA Board of Directors at its last meeting of the year in San Antonio. The programs appeal to a variety of audiences using targeted media: special events (for youngsters); movies (for youngsters and young adults); and television news (for adults and the public-at-large). On 17 November, the Board also supported in principle the IEEE emeritbadge program "to provide a global non-discriminatory precollege technology education program for boys and girls."

As part of the \$50,000 allotment, the IEEE-USA Board of Directors allocated \$30,000 to support two Engineers Week 2005 events including continuation of the Family Day activity to be held on Saturday, 19 February, at the National Building Museum in Washington, DC. The hands-on opportunity helps youngsters appreciate how things work and grasp fundamental engineering principles. In 1993, with the EWeek Committee, the IEEE launched the first EWeek Family Night at Intelsat.

In 2004, IEEE-USA and BE&K provided the bulk of funding to continue Family Day, when the IEEE led EWeek with Fluor Corp. More than 8,500 youngsters and adults broke the previous record for attendance at any event at the Building Museum. Youngsters interacted with Washington-area engineers to build towers, compete in a robot competition, explore a model of the Mars Rover, and meet PBS' "Zoom Into Engineering" cast. The EWeek Committee is working with engineering society volunteers in Washington to assume financial and organizational responsibility for Family Day as soon as 2006.

Also in support of EWeek 2005 (20-26 February), IEEE-USA underwrote the preparation of animated slides to promote "Introduce a Girl to Engineering Day." The slides will be shown in 157 Regal Cinema theatres in eight major cities prior to and including Engineers Week: Los Angeles/Long Beach 26; San Francisco/Hacienda Crossings; New York/Union Square; Atlanta/Hollywood 24; Philadelphia/King of Prussia;

Washington/Gallery Place Stadium 14; Chicago/Lincolnshire; Dallas/Fossil Creek; and Boston/Bellingham.

EWeek 2005 "Introduce a Girl to Engineering Day," now in its fifth year, is scheduled for Thursday, 24 February. The campaign encourage engineers, particularly women, to make the world of engineering "come alive" for girls. Since its inception, an estimated one-million girls have experienced engineering firsthand each year. IEEE-USA is also lending its support to a planned United Nations activity in support of EWeek 2005 Girl Day, having spearheaded the first such activity with EWeek in 2004.

In addition, the Board provided \$20,000 for IEEE-USA-supported engineering features in American Institute of Physics syndicated news feeds for local news programs in the top 108 U.S. television markets. The "Discoveries and Breakthroughs" news service delivers twelve 90-second broadcasts with two audio tracks each month to the subscribing stations. IEEE-USA involvement will ensure that more engineering stories are included. An IEEE-USA staff member is now participating in weekly editorial planning teleconferences to provide leads to IEEE experts on IEEE technologies.

During 2004, "Discoveries" provided a realistic image of how science, technology, engineering and math professionals actively work to contribute to a better quality of life. News stories have covered improved technology that brings health benefits (38%), new technologies that facilitate daily life (19%), better medical procedures (12%), improved forecasting and air quality (12%), and answers to questions that we are curious about (11%).

IEEE-USA is an organizational unit of the IEEE. It was created in 1973 to advance the public good and promote the careers and public-policy interests of the more than 225,000 technology professionals who are U.S. members of the IEEE. The IEEE is the world's largest technical professional society. For more information, go to <http://www.ieeeusa.org>.

Contact: Pender M. McCarter, APR, Fellow PRSA
IEEE-USA Director of Communications and Public Relations
Phone: (202) 785-0017, ext. 8353
E-Mail: p.mccarter@ieee.org

Contact: Chris McManes
IEEE-USA Senior Public Relations Coordinator
Phone: (202) 785-0017, ext. 8356
E-Mail: c.mcmanes@ieee.org

IEEE North Jersey Section Newsletter Advertising

The “NEWSLETTER” is the non-profit professional publication of the North Jersey Section of the Institute of Electrical and Electronics Engineers, Inc.

Published monthly except June (electronic only) and July, it is distributed to approximately 4,500 qualified members of the section.

Editorial content is pertinent and timely. It contains current information and details about special meetings, field trips, and seminars scheduled during the month and for future dates.

NEWSLETTER readers are influential in the Electrical and Electronics industries. They are in decision-making positions or can influence decisions in this important field.

Demonstrate your support of their professional organization by advertising in their Newsletter while reaching your customers and prospects.

Manufacturers can support local reps and distributors by using cooperative advertising in the IEEE NEWSLETTER.

IEEE North Jersey Section Newsletter Advertising Rates

	1x	5x	10x
Full Page	\$800	\$685	\$570
2/3 Page	640	548	460
1/2 Page	480	410	340
1/3 Page	350	300	250
1/6 Page	175	150	125
Classified and Per Inch	30	25	25

Classified job advertisements are welcome!

Letters to the Editor

Outsourcing or Just Bad Management?

By: Mark Carangi
Senior Member IEEE

The recently completed IEEE-USA Salary & Fringe Benefit Survey calculated the median income for Electro Technology and Information Technology Professionals (defined as electrical and electronics engineers, computer hardware and software engineers, and computer scientists and system analysts) declined for the first time in 31 years.

Why the decrease? IEEE-USA President John Steadman stated, "A host of factors, from off shoring and increased use of guest worker visas, to rising health insurance costs and global competition, are putting downward pressure on wages for U.S. high-tech workers. This is certainly true, but possibly other factors are at work and may be even a more significant cause.

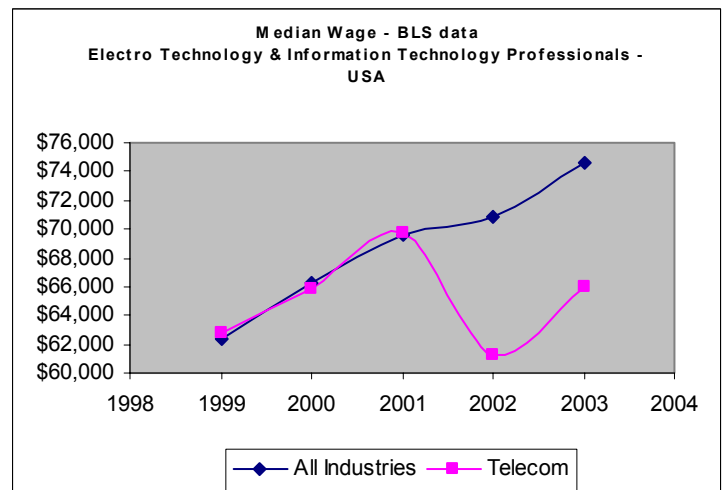
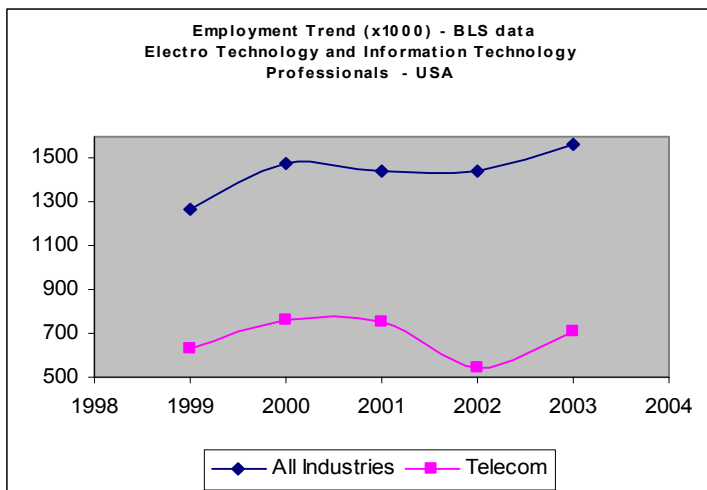
A look at the Occupational Employment Statistics (OES) Survey data from the US Bureau of Labor Statistics (<http://stats.bls.gov/>) may offer another possible cause for the US High-Tech employment slowdown. A summary of the BLS data based on the IEEE – USA definition of Electro Technology and Information Technology Professions (hereafter referred to as ETITP) is presented here.

According to the BLS data, and shown in the following charts, from 1999 to 2003 ETITP employment in the US Telecom industry went from a high of 766,000 in 2000 to a low of 540,000 in 2002. A difference of more than 225,000! It has since recovered some but is still down more than 50,000 from the high. Over the same period ETITP employment in all industries fell just slightly (probably due to the steep drop in Telecom) and, for 2003, is actually above the 1999 level!

Also shown is the ETITP median wage over the same period for all industries and telecom. The drop in wages for ETITP in Telecom is horrendous.

The drop in telecom, in both ETITP employment and median wages, is certainly significant. But why did it happen? It's unlikely that off shoring, guest workers or global competition combined could cause such a dramatic trend in such a sort period of time. So, what's up? Well, the Telecom Act of 1996 opened the industry to a free for all and just like the deregulation of banking (remember the S&L mess) and the airline industry before it. Telecom deregulation exposed just how poorly managed the industry was. Once freed from predictable rules and regulations management of one telecom firm after another quickly demonstrated just how inept they were. And, no surprise, just like the S&L industry and the airline industry before it what's left of much of the telecom industry is a financial and administrative mess.

You may not agree with this conclusion but for more information supporting this position you may want to read a book titled, "Optical Illusions: Lucent and The Crash of Telecom", by Lisa Endlich. The hysteria that infected the telecom industry, but especially Lucent, in that late 1990's was a tragedy that cost millions of Americas billions of dollars and lost careers.



Call For Presentations



WOCC 2005

The Fourteenth Wireless and Optical Communications Conference

April 22-23, 2005, Wyndham Hotel, Newark, New Jersey, USA

Conference Chair

Tien-Pei Lee, Telcordia (Retired)

Conference Organizer

Kevin Lu, Telcordia

Program Chairs

Qi Bi, Lucent

Heather Yu, Panasonic

Deyu Zhou, Opnext

Conference Coordinator

Xiaomei Qian, Amaranth

Treasurer

Emily Hu, Lucent

Publication

Wei Luo, Broadcom

Zhiyuan Yan, Lehigh University

Fund Raising

Russell Hsing, Telcordia

Peng Yin, Thomson

Sydney Zhang, Lucent

Local Arrangement

Mengchu Zhou, NJIT

Registration

Hongya Ge, NJIT

Web Design/Database Manager

Shuang Yu, Lucent

Public Relations

Yi Hsuan, Lucent

Shuang Yu, Lucent

Kang Yueh, Crown Castle

Exhibits

Russell Sun, Lucent

Co-Sponsoring Associations

- The Chinese Institute of Engineers – USA (CIE-USA)
- The Photonics Society of Chinese Americans (PSC)
- The Chinese Association of Science and Technology (CAST)
- The Chinese American Academic and Professional Society (CAAPS)
- The Monte Jade Science and Technology Association (MJSTA)
- IEEE Communications Society North Jersey Chapter

The fourteenth Annual Wireless and Optical Communications Conference (WOCC) will bring together technical experts and business leaders from the North America and Pacific Rim to discuss multimedia, optical, and wireless communications technologies and business opportunities. The theme of WOCC 2005 is **Convergent Communications** over public mobile wireless networks, public fixed broadband wireline networks, and private customer premises networks. The integration of these three networks is the focus of a new next-generation network (NGN) providing *convergent user-centric services* that are no longer associated with the types of network access or content media. Instead, these convergent user-centric services will offer seamless delivery of multimedia applications including voice, data, image, and streaming video independent of any access technologies. The transport layer protocol is converging on Internet Protocol (IP) that propelled the growth of World Wide Web (WWW). The network and service providers will need to deploy standard-compliant converged networks and offer these new value-added services to save operational cost and grow their revenue. Convergent Communications can truly be considered as the enabler for the next phase of growth for the telecommunication industry.

Presentations are solicited in areas of multimedia, wireless, and optical communications in one of the following (but not exclusive) forms:

- Reports of new technological and scientific findings and results
- Reviews, tutorials and technology surveys
- New service operational experiences
- Field trial and new technology/application deployment results
- Economic studies and analysis
- Business proposals and presentations

Submission Deadline: February 15, 2005

Authors will be notified by **March 1, 2005** about the acceptance of their presentation.

Format: Include both abstract and speaker's biography on one 8.5"x11" page with 1" margins and the font size larger than 10. Also include the title of presentation, author names, affiliations, and e-mail addresses.

Submit the abstract/bio in Microsoft Word to one of the program chairs:

Dr. Qi Bi, Wireless Program Chair, qbi@lucent.com

Dr. Heather Yu, Multimedia Program Chair, heathery@ieee.org

Dr. Deyu Zhou, Optical Program Chair, dzhou@opnext.com

For student poster presentation, contact Prof. Hongya Ge, ge@njit.edu

Please refer to <http://www.wocc.org/> for additional information.

IEEE North Jersey Section Course Marketing Research

*Tuesday Evenings, February 22, 2005 through April 19, 2005 (No class on March 22)
Eight weekly classes (February 22, March 1, 8, 15, 29, April 5, 12, 19, 2005)
at NJ International Bulk Mail Center, 80 County Road, Jersey City, NJ
(Checks should not be mailed to this address)*

The North Jersey Section IEEE is offering an evening course entitled "Marketing Research". Monster.com lists 450+ Market Research jobs in the New York tri-state area daily! This course deals with the collection, evaluation and analysis of the market-related information. Topics are: market research industry, problem definition, research process, focus group, secondary database, quantitative research, questionnaire design, sampling techniques, statistical testing, bivariate and multivariate correlation, communicating results and management reports. Using the SPSS software, you will learn to perform detailed data analysis.

The IEEE certificate of completion will be given to you when you finished this course. In addition, you will be qualified to work as a market researcher in any organization that needs your quantitative skills.

Instructor: Donald Hsu, PhD, has been a corporate manager for 11 years and is an experienced trainer. Since 2000, he has trained 400+ people in *Management, Marketing, Global Marketing, and Marketing Research* courses in five organizations.

TOPICS

1. Describe the market research industry, problems and research process
2. Understand the importance of primary data collection, secondary database, and survey
3. Define quantitative research, measurement technique and sampling methods
4. Explain the questionnaire design, data processing and statistical testing
5. Build the knowledge of bivariate regression and multivariate data analysis
6. Communicate results, manage ethical issues, and prepare reports
7. Employ SPSS software for frequency analysis, ANOVA, T-test and others
8. Review real-world marketing research using Harvard Business School cases
9. Present final Group Project

Class size will be limited to a maximum of 25 with a minimum of 15. Early registration is recommended. Phone reservations will NOT be accepted. Reservations accepted after February 10, 2005 will require a late fee of \$25. No reservations will be accepted after February 15, 2005.

WHERE: NJ International Bulk Mail Center, 80 County Road, Jersey City, NJ. (Checks **should not** be mailed to this address)
WHEN: 8 Sessions, Tuesdays, February 22, March 1, 8, 15, 29, April 5, 12, 19, 2005, 6:30-9:30 PM.
COST: With textbook or notes: IEEE (& affiliate) members \$375; Non-IEEE members \$475.
CONTACT: Bhanu Chivukula -email b.chivakula@computer.org

REGISTRATION: Marketing Research

Please send the checks in the name of **North Jersey Section IEEE** with filled in registrations to:
Bhanu Chivukula, 19 Prestwick Way, Edison, NJ 08820. Please email inquiries to b.chivakula@computer.org

Name: / Mr. / Mrs. / Miss / Ms. / _____

Non-member ✉ email address ✉
 IEEE Member Member #: _____ Member of _____ technical society

Employer: _____

Employer Address: _____

Home Address: _____

Business (day) telephone #: _____ Home telephone #: _____

Please enclose required fee payable to: **North Jersey Section IEEE**
Registration status will be mailed after February 15, 2005. Phone inquiries concerning registration will NOT be honored. In general, the effective date of the application corresponds to the date when BOTH a fully completed application/registration and payment are received.

Tuition receipt will be mailed only if this box is checked Signature: _____