

The



IEEE Newsletter

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

VTS & MTT-S/AP-S Chapters:

Laptop Antenna Design and Evaluation for WLAN Applications

On Thursday, April 21, 2005 the Vehicular Technology Society together with MTT/S/AP-S will host a presentation entitled "Laptop Antenna Design and Evaluation for WLAN Applications" by Dr. Duixian Liu.

About the Talk

Wireless Wide Area Network (WLAN) use has increased tremendously for the past several years. Almost all new laptops are now equipped with integrated WLAN systems. Many antenna types can be used for laptop integrated wireless applications. However, the most popular ones are the inverted-F (INF) and slot antennas, or the many variations of these two types due to their simple design, easy integration, low cost and overall performance. The laptop antennas are very different from the cellphone antennas. This talk will discuss the commonly used single or dualband antennas in laptops, the method of antenna evaluations, and future directions of laptop integrated wireless systems.

About the Speaker

Duixian Liu (S'85-M'90-SM'98) received his BS degree in electrical engineering from XiDian University in Xi'an, China in 1982, MS and PhD degrees in electrical engineering from the Ohio State University in Columbus, Ohio in 1986 and 1990, respectively. From 1990 to 1996 he worked for Valor Enterprises Inc. in Piqua, Ohio first as an electrical engineer and then the chief engineer. He designed an antenna product line ranging from 3 MHz to 2.4 GHz for the company, a very important factor for the prestigious Presidential "E" Award for Excellence in Exporting in 1994. He has been with IBM at Thomas J. Watson Research Center as a research staff member since April 1996. His research interests are antenna design, electromagnetic modeling, digital signal processing, and communications technology. He twice received the IBM's outstanding technical achievement

awards in 2001 and 2002, and IBM Corporate Award (IBM's highest technical award) in 2003 for contributions to the integrated antenna subsystems for laptop computers. He has fifteen patents issued and sixteen patents pending. He has published more than forty journal and conference papers and organized and chaired many sessions in several international conferences.

All Welcome!

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

Pre-Registration Strongly Suggested

Please email swilkowski@lucent.com or kdixit@rfsales.com with full name (first and last), affiliation, citizenship so that a guest badge is ready.

Time: 7:00 PM, Thursday, April 21, 2005. Pre-meeting dinner will start at 6:00 PM.

Place: Lucent Technologies, Room wh-4A-323, 67 Whippany Rd, Whippany, NJ 07981.

Information: Stephen Wilkowski, Lucent Technologies, (973) 386-6487, Arthur Greenberg (973) 386-6673 (ahg1@lucent.com), Kirit Dixit, RF Electronics, (201) 400-2313, Willie Schmidt, (973) 492-0371.

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.chivukula@computer.org.

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

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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>

REPORT ADDRESS CHANGES TO:

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

Design and Performance of Microwave and Millimeter-wave High Efficiency Power Amplifiers

On April 14, 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 "Design and Performance of Microwave and Millimeter-wave High Efficiency Power Amplifiers." The speaker will be Dr. James J. Komiak.

About the Talk

Device technologies covered include Si BJT, MESFET, HBT, PHEMT, InP, MHEMT, and Wide Bandgap (SiC, GaN). Content includes principles of operation, structures, characteristics, and state of the art benchmarks. Power amplifiers utilizing these device technologies covering L-band through W-band are described including state of the art benchmarks.

About the Speaker

James J. Komiak received a PhD degree in Electrical Engineering from Cornell University in 1978. His PhD research was directed towards a novel broadband matching technique for arbitrary loads using measured data directly, the "Real Frequency Technique".

Dr. Komiak is an Engineering Fellow in the Microwave Electronics Group at BAE Systems. His current activities are in MMIC, module, and sub-system design for EW, communication, and radar system applications. Principally known for work in power, Dr. Komiak has designed over 100 MMICs achieving state of the art results. Prior to consolidation at Sanders and the subsequent sale to BAE Systems, Dr. Komiak was with the Lockheed Martin/Martin Marietta/General Electric Electronics Laboratory.

Dr. Komiak has been active with MTT-S and the IMS TPC with MTT-5/SC-19 High Power Amplifier Components. He was with the IEEE GaAs IC Symposium TPC and ExCom and was Symposium Chairman in 2000. He is also active as an Accreditation Board for Engineering & Technology IEEE-sponsored University Electrical Engineering Program Evaluator. He has 65 publications and 6 patents relating to circuit theory, GaAs MMIC devices and technology, high power amplifiers, solid-state apertures, and RF/microwave design. Dr. Komiak received the 2001 BAE Systems Silver Chairman's Award for Innovation for "Blue Force Locator and Monitor", the 1993 Martin Marietta Jefferson Cup Award for

"Outstanding Technical Leadership in Development and Demonstration of High Power and High Efficiency MMIC Amplifiers and T/R Modules for Phased Array Radar", and his work is represented in the MTT Symposium MMIC Historical Exhibit as "World's First Octave Band MMIC with Power Output in Excess of 10 Watts (1989)".

All Welcome!

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

Time: 7:00 PM, Thursday, April 14, 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).

Conference Rooms Needed!

The North Jersey Section (Education Committee) is looking for conference room facilities to hold their training seminars. The seminars are being held on one weeknight from 6:30 PM to 9:00 PM. In return for providing the conference facility for free, the organization can get free registration up to three members in the course/seminar. Please contact Bhanu Chivukula, Education Committee Chairman, at b.chivukula@computer.org for suggestions or discussions, if interested.

WANTED - RF Engineers with background in Radar systems, Antenna, high power microwave Magnetron, TWT Transmitters, minimum 5 yrs experience in RF design & test; Bachelors degree required. Prefer experience in Military Systems. Job location: Tobyhanna Army Depot, PA (1 hour from Parsippany).

Resume to: afford@optonline.net or call Dan Kamdar at 973-890-8915.

IEEE North Jersey Section Activities

April 2005

Apr. 6 – “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.

Apr. 7 – “Self-Healing Software Systems” - NJ Communications Chapter, 6:30 PM (refreshments at 6:15 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/comm.html> for the latest updates.

Apr. 13 – “Engineers Meet: Off Shoring: A different view” - 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@bellatlantic.net).

Apr. 14 – “Design and Performance of Microwave and Millimeter-Wave High Efficiency Power Amplifiers” – 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).

Apr. 21 – “Laptop Antenna Design and Evaluation for WLAN Applications” – VTS & MTT-S/AP-S Chapters, 7:00 PM (dinner at 6:00 PM), Lucent Technologies, Room wh-4A-323, 67 Whippany Rd, Whippany, NJ. Stephen Wilkowski, Lucent Technologies, (973) 386-6487, Arthur Greenberg (973) 386-6673 (ahg1@lucent.com), Kirit Dixit, RF Electronics, (201) 400-2313, Willie Schmidt, (973) 492-0371.

Apr. 21 – “Security: Defending your network from Hackers, Crackers, and Slackers” - NJ Computer Chapter, 7:00 PM (pre-meeting buffet at 6:00 PM), Public Meeting Room, Morris County Library, 30 E. Hanover Ave, Whippany, NJ. Seth Jakel (973) 731-1902, (sgjakel@comcast.net) or Vivek Shaiva (908) 229-6125 (vshaiva@computer.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.

Apr. 28 – “Performance through Resource Management” - 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. 29 & May 20 – “Motor And Motor Controls Seminar” - NJ IAS/PES Chapters, 9:00 AM – 3:30 PM, PSE&G Training Center, 234 Pierson Avenue, Edison NJ. Ronald Quade, PE, (732) 205-2614 or rwquade@ieee.org.

Upcoming Meetings

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.

May 4 – “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.

May 12 – “Spring 2005 Packaging Symposium” – registration 12:00 - 1:00 PM, papers from 1:00 - 5:30 PM, buffet dinner 5:30 - 7:30 PM, Lucent Technologies, Bell Laboratories, 600 Mountain Ave, Murray Hill, NJ. See <http://www.imaps.org/chapters/garden> for details. Michael Salloum (msalloum@rdcircuits.com).

May 19 – “HIFET-An Innovative approach for High-Voltage, High-Power, Broadband Amplifiers” – 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).

May 26 – “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.

Members and Non-Members Welcome
PLEASE POST

2005 IEEE NORTH JERSEY FELLOWS

Laurence W. Nagel

"for contributions to the field of integrated circuit simulation."



Dr. Nagel has 30 years of experience in the integrated circuit industry. While earning his BS, MS, and PhD degrees at the University of California, he developed the SPICE circuit simulation program and launched a cottage industry of SPICE simulation tools. Dr. Nagel then began a 20 year career at Bell Laboratories which included developing the ADVICE circuit simulation program; participating in the development of process and device simulation tools; participating in the development of the Kull-Nagel bipolar model; designing analog circuits for submicron NMOS processes; working in the AT&T Intellectual Property Division on assertion of patents and negotiation of patent licenses; and serving as project manager in the development of the Celerity circuit simulation program. Dr. Nagel then joined Anadigics, Inc., where he worked on supporting simulation of RF integrated circuits; modeling and characterization of GaAs MESFET device processes; and importing silicon CMOS design tools and foundry support. Dr. Nagel now is an independent consultant.

Yun Q. Shi

"for contributions to multidimensional signal processing."



Dr. Yun Q. Shi has been a member of the Department of Electrical and Computer Engineering at the New Jersey Institute of Technology, Newark, NJ, since 1987, and is currently a professor there. He obtained his BS degree and MS degree from the Shanghai Jiao Tong University, Shanghai, China; his MS and PhD degrees from the University of Pittsburgh, PA. His research interests include visual signal processing and communications, digital multimedia data hiding and information assurance, applications of digital image processing, computer vision and pattern recognition to industrial automation and biomedical engineering, theory of multidimensional systems and signal processing. Some of his research projects are currently supported by several federal and New Jersey State funding agencies. He is an author/coauthor of more than 160 papers in his research areas, a book on Image and Video Compression, three book chapters on Image Data Hiding and one book chapter on Digital Image Processing. He holds two U.S. patents and has eight U.S. patents pending.

Dr. Shi is the chairman of Signal Processing Chapter of IEEE North Jersey Section, an editorial board member of International Journal of Image and Graphics, a member of IEEE CASS Technical Committee of Visual Signal Processing and Communications, Technical Committee of Multimedia Systems and Applications, and Technical Committee of Life Science, Systems and Applications, a member of IEEE SPS

Technical Committee of Multimedia Signal Processing, and an Associate Editor of IEEE Transactions on Circuits and Systems II. He was an IEEE CASS Distinguished Lecturer, a co-general chair of the IEEE 2002 International Workshop on Multimedia Signal Processing, a formal reviewer of the Mathematical Reviews, an Associate Editor of IEEE Transactions on Signal Processing, the guest editor of several special issues on several journals, and one of the contributing authors in the area of Signal and Image Processing to the Comprehensive Dictionary of Electrical Engineering.

Nicholas Geoffrey Duffield

"for contributions to the measurement, analysis and management of telecommunications networks."



Nick Duffield was awarded a BA in Natural Sciences in 1982 and the Certificate of Advanced Study in Mathematics in 1983 by the University of Cambridge, U.K. He was awarded a PhD in 1987 by the University of London, U.K., for a study of non-equilibrium phase-transitions in biological systems. He held postdoctoral positions in Heidelberg, Germany, and Dublin, Ireland, before joining the faculty of the School of Mathematical Sciences in Dublin City University, Dublin, Ireland in 1991. He moved to AT&T Labs-Research in 1995, where he is a Senior Technical Consultant in the Internet and Network Systems Research Laboratory. His current research focuses on performance measurement, inference and analysis of communications networks. He is active in the IETF and was charter Chair of its working group on Packet Sampling. He has been elected a member of IFIP Working Group 7.3. He is a co-inventor of the Smart Sampling technologies that lie at the heart of AT&T's scalable Traffic Analysis Service.

Kadangode K. Ramakrishnan

"for contributions to congestion control and traffic management in communication networks."



Dr. K. K. Ramakrishnan is a Technology Leader at AT&T Labs.-Research in Florham Park, New Jersey. He joined AT&T Bell Labs in 1994 and has been with AT&T Labs Research since its inception in 1996. Between 2000 and 2002, he was at TeraOptic Networks, Inc., as Founder and Vice President. Prior to 1994, he was a Technical Director and Consulting Engineer in Networking at Digital Equipment Corporation.

At AT&T Labs Research, he is involved in several technical and strategic activities in networking, including Quality of Service, Congestion Control, Signaling, Virtual Private Networks, IP Telephony and Metro Area Networks. He has published nearly 100 papers and has 69 patents issued. His contributions on congestion control, channel access protocols (for Ethernet and cable), network interfaces, operating system support for network I/O, signaling and IP Telephony have been adopted and implemented in the industry. His work on the "DECbit" congestion avoidance mechanism was recognized in the 1995 retrospective issue of ACM Sigcomm Computer Communication Review as one of the 16 most important papers published over the last 25 years in ACM Sigcomm publications.

K.K. has an MS degree from the Indian Institute of Science (1978), and an MS (1981) and PhD (1983) in Computer Science from the University of Maryland, College Park. K.K. has been on the editorial board of the IEEE/ACM Transactions on Networking and IEEE Network Magazine and has been a

member of the National Research Council Panel on Information Technology for NIST. He has participated in numerous standards bodies working on communication networks.

Mohammad S. Obaidat

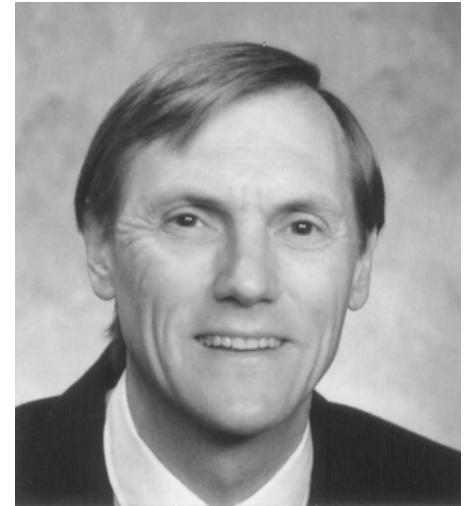
"for contributions to adaptive learning, pattern recognition and system simulation."



Professor Mohammad S. Obaidat is an internationally well known academic, researcher, and scientist. He received his PhD and MS degrees in Computer Engineering with a minor in Computer Science from The Ohio State University, Columbus, Ohio. Dr. Obaidat is currently a full Professor of Computer Science at Monmouth University, NJ. Among his previous positions are Chair of the Department of Computer Science and Director of the Graduate Program at Monmouth University and a faculty member at the City University of New York. He has received extensive research funding and has published about three hundred (300) refereed technical articles in scholarly international journals and proceedings of international conferences. He has written five books and over three hundred (300) refereed scholarly journal and conference articles. Dr. Obaidat has served as a consultant for several corporations and organizations worldwide and is editor of many scholarly journals including the International Journal of Communication Systems published by John Wiley. In 2002, he was the scientific advisor for the World Bank/UN Workshop on Fostering Digital Inclusion. He was an IEEE Distinguished Visitor/Speaker and has been serving as a National ACM (Association for Computing Machinery) distinguished Lecturer since 1995. Recently, Dr. Obaidat was awarded the distinguished Nokia Research Fellowship and the Distinguished Fulbright Scholarship.

Thomas H. Wood

"for contributions to high performance optical communications systems."



Thomas H. Wood received an ScB in physics from Brown University in 1975 and a PhD in physics from the University of Illinois-Urbana in 1980. He worked 18 years in Lucent's Bell Labs Research area. In 1983, he co-invented the Multiple Quantum Well Electro-Absorption (MQW EA) optical modulator, which was integrated with a semiconductor laser to make the Electroabsorption-Modulated Laser (EML). These EMLs are now widely deployed as data sources in long-distance fiber systems. While in Bell Labs Research, he also invented and characterized several novel Fiber-to-the-Home architectures.

In 1998, he joined Lucent's Optical Networking Group as a Senior Manager. He headed a group which demonstrated advanced Wavelength-Division Multiplexing (WDM) transmission technologies for Lucent's new long-haul fiber system, LambdaXtreme Transport™. In 2003 he moved to Lucent's Government Communication Laboratory, where he is currently leader of the Optical Design Group.

In addition to being named an IEEE Fellow "for contributions to high performance optical communications systems," he was awarded the Bell Labs Distinguished Member of Technical Staff award in 1991 and was elected a Fellow of the Optical Society of America in 1997.

Amy Ruth Reibman

"for contributions to the transport of video over networks."



Amy R. Reibman received the BS, MS and PhD degrees in electrical engineering from Duke University in 1983, 1984, and 1987, respectively. From 1988 to 1991, she was an assistant professor in the Department of Electrical Engineering at Princeton University. In 1991 she joined AT&T Bell Laboratories, and became a Distinguished Member of Technical Staff in 1995. She is currently a Technical Consultant in the Communication Sciences Research Department at AT&T Laboratories.

She was elected Fellow of the IEEE in 2005, for her contributions to video transport over networks. In 1998, she won the IEEE Communications Society Leonard G. Abraham Prize Paper Award. She was the Technical co-chair of the IEEE International Conference on Image Processing in 2002; the Technical Co-chair for the First IEEE Workshop on Multimedia Signal Processing in 1997; and the Technical Program Chair for the Sixth International Workshop on Packet Video in 1994.

Dr. Reibman's research interests include video compression systems for transport over packet and wireless networks, and video quality metrics.

Jeff D. Bude

"for contributions to the deep submicron MOSFETs."

Jeff Bude was born in St. Louis, Missouri in 1966. He received his BS degree with Highest Honors in 1987 and PhD degree in 1992, both at the University of Illinois at Urbana-Champaign. In 1992 he joined Bell Laboratories in Murray Hill, NJ, as a Member of the Technical Staff and became a Distinguished Member of the

Technical Staff in 1999. Since 2000 he has been a Director of the High Speed Electronics Device Research Department and the Advanced RF Power Device Department at Agere Systems. In 2005 he became an IEEE Fellow for contributions to the deep sub-micron MOSFET. His research interests are in computational physics and semiconductor device physics. He has been involved in the simulation, design and implementation of novel memories, transistors and photo-detectors, and in research emphasizing nano-transistor physics, hot carrier effects and reliability.

Walter Willinger

"for the analysis and mathematical modeling of Internet traffic."



Walter Willinger is a member of the Information and Software Systems Research Center at AT&T Labs - Research, Florham Park, NJ. Before that, he was a Member of Technical Staff at Bellcore (1986-1996). He received the Diplom (Dipl. Math.) from the ETH Zurich, Switzerland, and the MS and PhD degrees from the School of Operations Research and Industrial Engineering, Cornell University, Ithaca, NY. He has been a leader of the work on the self-similar ("fractal") nature of Internet traffic and has focused more recently on investigating the topological structure of the Internet and on developing a theoretical foundation for the study of large-scale communication networks such as the Internet. He is a co-recipient of the 1996 IEEE W.R.G. Baker Prize Award from the IEEE Board of Directors and the 1994 W.R. Bennett Prize Paper Award from the IEEE Communications Society.

North Jersey Section Seeks Committee Chairs and Volunteers

The NNJ IEEE Section ExCom is seeking new volunteers to help conduct business at the section level for the benefit of its membership in the North Jersey section and surrounding areas. There are a variety of volunteer positions open and available. They range from long-term to short-term, technical to non-technical, leadership or just participatory. All activities have varying levels of time commitment. For Chapter Chairs, you MUST be a member of the corresponding IEEE Society.

If you would like to become involved with volunteering in some of these efforts or positions or just become more informed about what is happening at the NNJ IEEE Section, please contact the persons listed below for additional information and questions. You can even attend the section business meeting held the first Wednesday of every month to find out more and other volunteer activities that require some help.

Some of the positions currently open and available are:

- **LEOS Chapter Chair.** Contact Har Dayal (har "DOT" dayal "AT" baesystems "DOT" com)
- **Controls Chapter Chair.** Contact Howard Leach (Hhleach "AT" aol "DOT" com)
- **GOLD Affinity Group Chair.** Contact Dick Tax (rtax "AT" bellatlantic "DOT" net)
- **Historian Committee** seeks help collecting IEEE historical information and specifically IEEE North Jersey Section History. Contact Al Stolpen (a "DOT" stolpen "AT" ieee "DOT" org)
- **Student Activities Committee** seeks new volunteers for North Jersey. Contact Amit Patel (a "DOT" j "DOT" patel "AT" ieee "DOT" org)

Additionally, if interested volunteers would like to get more general information about other activities in our section, visit the North Jersey Section website for newsletter information <http://www-ec.njit.edu/~ieeenj/> or contact Har Dayal, har "DOT" dayal "AT" baesystems "DOT" com.

NJ Communications Society:
Self-Healing Software Systems

On April 7, 2005, the IEEE North Jersey Section Communications Society Chapter along with NJIT will host a presentation on "Self-Healing Software Systems." The speaker will be Dr. Angelos Keromytis.

About the Talk

Dr. Keromytis will discuss research in self-healing software systems that automatically diagnose and identify the root cause of their failures, and prevent them from repeating in the future through automatic structural modifications of the system itself. The talk will focus on two such systems: a software self-patching system that can protect against zero-day worm attacks (that is, attacks that were not previously known and for which no software patch exists), possibly without human intervention; and an emulator-based system that can learn and recover from broader classes of common software failures. I will discuss the capabilities and limitations of our current systems, and outline future directions for the work.

About the Speaker

Angelos Keromytis has been an assistant professor with the Department of Computer Science at Columbia University since 2001, and director of the Network Security Laboratory. He received his BSc in Computer Science from the University of Crete, Greece, and his MSc and PhD from the Computer and Information Science (CIS) Department, University of Pennsylvania. His current research interests revolve around systems and network security, and cryptography. Previous research interests include active networks, trust management systems, and systems issues involving hardware cryptographic acceleration. His recent work has been on survivable system and network architectures. For a full CV, see <http://www.cs.columbia.edu/~angelos/cv.html>.

All Welcome!

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

Time: 6:30 PM (refreshments start at 6:00 PM), Thursday, April 7, 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/comm.html> for the latest updates.

NJ Computer Chapter:
Security: Defending your network from Hackers, Crackers, and Slackers

On Thursday, April 21, 2005, the IEEE North Jersey Section Computer Chapter will host a presentation on "Security: Defending your network from Hackers, Crackers, and Slackers" by Arthur J. Hedge III.

About the Talk

Personal and corporate networks are under ever increasing attacks. With network failures, data losses, and privacy concerns in the news on a regular basis, one needs to ask, "Are you prepared?". As more and more organizations provide connectivity to their employees from anywhere at any time, this becomes more important on a daily basis.

In this presentation, we will discuss the threats that exist, a survey of solutions, and a framework to remain vigilant. The solutions will describe the tools on the market, how they can be utilized, and a methodology for implementing and maintaining lasting defenses. The discussion will be geared towards corporate networks and the latest methods of defense.

About the Speaker

Arthur J. Hedge III is currently President of Castle Ventures and Principal of Southport Communications LLC. He focuses on helping companies reduce costs and operate more effectively by improving their business processes. Mr. Hedge has over 20 years of consulting expertise, focused on large-scale application development. He is also a member of the AIIM Document Management standards committee. Mr. Hedge is a graduate of the Massachusetts Institute of Technology

All 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 6:00 PM.

Time: 7:00 PM, Thursday, April 21, 2005 (pre-meeting buffet starting at 6:00 PM).

Place: Public Meeting Room, Morris County Library, 30 E. Hanover Ave, Whippany, NJ, (973) 285-6930.

Information: Seth Jakel, (973) 731 1902, sgjakel@comcast.net or Vivek Shaiva, (908) 229-6125, vshaiva@computer.org.

NJ Consultants' Network:
Performance through Resource Management

On April 28, 2005, the IEEE Consultants' Network of Northern NJ (C>NNNJ) will host a meeting on "Performance through Resource Management." The speaker will be Donald A. Borcherding.

About the Talk

Rapid and effective product development requires the right combination and balance of engineering talent, project planning and a well thought out development process. However, for organizations that need to share resources across multiple projects and product lines, implementing a resource planning and management process can provide surprising benefits in gaining the competitive edge. This talk will cover five basic process areas (i.e., requirements management, requirements development, supplier management, project planning and validation) to improve product development effectiveness which free up engineering resources and increase the productivity of the organization. These five topics will be presented to show why they are important to both clients and consultants.

About the Speaker

Donald A. Borcherding is the founder of NexSummit LLC. He has a BSEE from the University of Missouri at Rolla and has over 12 years of hands-on experience in engineering development projects, resource management, project management, process development and continuous process improvements. You can reach Don at dborcherding_1@msn.com or (908) 684-8914.

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, April 28, 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>.

NJ Section PACE & GOLD:

Engineers Meet:

Off Shoring: A different view

On Wednesday, April 13, 2005, the North Jersey Section Professional Activities Committee and Graduates of the Last Decade committees will host a meeting with Mark C. Hehl. He will discuss the philosophy: "*There are ways to keep operations at home!*"

About the Meeting

Mr. Hehl will discuss these topics:

- Factors that are forcing offshore manufacturing. It is not just labor costs.
- The current state of manufacturing in China and other low cost areas.
- Disadvantages of manufacturing offshore
- Advantages of offshore manufacturing
- Hidden costs that many never consider and measure
- Future of China/Asia - risks
- The future of Latin America - risks
- Avenues to keep manufacturing in North America - the danger of cost cutting & tools that will improve operations & automatically reduce costs
- The final decision - financial analysis & capturing all hidden costs

About the Speaker

Mark C. Hehl is President of Hehl Associates, which provides offshore supply chain development consulting services. His efforts produced significant increases in quality, meaningful reductions in lead times, and cost savings.

He holds a BS in EE from the NYIT and MS in Management from the Polytechnic Institute of NY.

His work has been included in such fields as aerospace, plastics, metal parts, and pharmaceuticals. He works with companies in both China, and Latin America.

All Welcome!

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

You are encouraged to attend and invite your associates.

Members and students from all professional societies and engineering disciplines are welcome. We now have attendees from IEEE, ASME, NSPE, ASCE and AEA.

For 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, Wed., April 13, 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@bellatlantic.net).

NEWS from IEEE-USA:

Four U.S. IEEE Members Begin IEEE-USA Government Fellowships

Washington (24 February 2005) - Randall Brouwer, Gordon Day, Norman Schneidewind and Nick Zayed began their IEEE-USA Government Fellowships in January. Each is advising government leaders on key technology policy issues and helping them understand the key role engineers play in national security, innovation and economic prosperity.

Brouwer, professor and former chair of the engineering department at Calvin College in Grand Rapids, MI, is advising Rep. Dana Rohrabacher (R-CA). The congressman is a member of the House Science Committee, chaired its Space and Aeronautics Subcommittee for the past eight years, and authored the IEEE-USA-supported Commercial Space Launch Amendments Act that President Bush signed into law on 23 December 2004. (See related story at <http://www.todayengineer.org/2005/Jan/x-prize.asp>.) Rep. Rohrabacher is also a member of the Congressional Research and Development Caucus, of which IEEE-USA is an advisory committee member.

Day, a retired division chief for the National Institute of Standards and Technology in Boulder, CO, is advising Sen. Jay Rockefeller (D-WV) on science and technology issues, particularly communications and homeland security. Sen. Rockefeller serves on the Senate Commerce, Science and Transportation Committee, and is ranking member of the Aviation Subcommittee.

Schneidewind is a professor of information sciences at the Naval Postgraduate School in Monterey, CA. He's supporting Sen. Daniel Akaka (D-HI) and will act as the science adviser to the Senate Homeland Security and Governmental Affairs Committee's Subcommittee on Financial Management, the Budget and International Security.

Zayed is a communications systems engineer with the Northrop Grumman Corp. in Redondo Beach, CA. He is working in the State Department's Office of Science and Technology Cooperation. The mission of the office is to provide, promote and facilitate policy coordination and international science and technology cooperation among federal technical agencies and their overseas counterparts.

In Memoriam - Rene Castenschiold, Life Fellow, IEEE

Rene Castenschiold of New Vernon died February 2nd, 2005, after a short illness. He was 81. He was born in Mt. Kisco, NY, in 1923, and in 1942, he moved to Bernardsville, where he met and married his wife, Martha.

During World War II, with a degree in electrical engineering from Pratt Institute, he worked on the Manhattan Project, one of the youngest of the engineers and scientists involved. After the war, he was a product designer for the General Electric Co. in Schenectady, NY. In 1951, Mr. Castenschiold joined the Automatic Switch Company, then in Orange, now in Florham Park where he became executive engineering manager. He served as the company representative to NEMA, Underwriters Laboratories, the National Fire Protection Association, the Canadian Standards Association and the Electrical Generating Systems Association, where he worked on the standardization of automatic transfer switches.

Mr. Castenschiold was a leading authority on emergency and standby power systems for essential electrical loads. After joining the Automatic Switch Co., he pioneered in the research, design and standardization of automatic transfer switches and emergency generator controls. His accomplishments increased the reliability of emergency power for critical electrical loads in hospitals, airports and communication facilities.

The recipient of 14 patents and author of 50 published papers and articles, he successfully advanced closed-transition transfer switching for computer and other essential loads, which are vulnerable to momentary losses of electrical power. In recognition of his research and standardization of standby and emergency power systems, the National Electrical Manufacturing Association presented him with the prestigious James H. McGraw Award in 1986 and the IEEE presented him with the Richard Harold Kaufmann Award in 1990. Mr. Castenschiold was a Life Fellow of the IEEE and a former US delegate to the International Electrotechnical Commission. He was a board certified forensic engineer and a licensed professional engineer in New Jersey, New York and Pennsylvania.

In 1986, Mr. Castenschiold founded LCR Consulting Engineers, PA, where he and his associates specialized in electroforensics. He retired as president in 2004.

U.S. Technical Employment Falls by More Than 220,000 Workers from 2000 to 2004

Washington (3 March 2005) - The number of employed U.S. technical workers has fallen by 221,000 in six major computer and engineering job classifications from 2000 to 2004, according to data compiled by the U.S. Department of Labor's Bureau of Labor Statistics (BLS).

The largest drops occurred among computer programmers, followed by electrical and electronics engineers, then computer scientists and systems analysts. These declines were offset by substantial employment increases for computer and information systems managers, computer hardware engineers and computer software engineers.

"The drop in computer programmers and rise in managers reflects the trend toward offshoring of programming jobs and the resulting need for professionals to manage outsourced projects," IEEE-USA President Gerard A. Alphonse said.

According to the BLS, computer programmers have taken the biggest hit, with a drop of more than 24 percent -- from 745,000 in 2000 to 564,000 in 2004. In addition, the number of employed electrical and electronics engineers shrunk by 101,000, from 444,000 in 2000 to 343,000 last year, a decrease of nearly 23 percent. Computer scientists and systems analysts have experienced similar losses, dropping more than 16 percent, from 835,000 in 2000 to 700,000 in 2004.

However, employed computer and information systems managers have jumped from 228,000 in 2000 to 337,000 last year, a dramatic increase of almost 48 percent. Computer hardware engineers rose from 83,000 in 2000 to 96,000 in 2004, a nearly 16 percent increase. Employed computer software engineers have risen by 74,000, from 739,000 in 2000 to 813,000 in 2004, a 10 percent increase.

The table below summarizes the BLS data:

Job Classification	2000	2004	Change	Pct.
Computer Hardware Engineers	83,000	96,000	+13,000	+15.7
Computer & Info. Systems Managers	228,000	337,000	+109,000	+47.8
Computer Programmers	745,000	564,000	-181,000	-24.3
Computer Scientists & Systems Analysts	835,000	700,000	-135,000	-16.2
Computer Software Engineers	739,000	813,000	+74,000	+10.0
Electrical & Electronics Engineers	444,000	343,000	-101,000	-22.7
Total	3,074,000	2,853,000	-221,000	-7.2

Offshoring Is Major Cause of Technical Unemployment, IEEE-USA Survey Reveals

Washington (8 March 2005) - Offshoring is the second-highest cause of unemployment among U.S. technical professionals, according to the 2004 IEEE-USA Unemployment Survey released today.

The leading cause of unemployment, cited by 62 percent of U.S. IEEE members who reported being laid off, was a business downturn. Fifteen percent reported that their jobs were transferred offshore, while 10 percent pegged merger or acquisition as the cause of their layoff.

A correlation between results of the Unemployment Survey and the 2004 IEEE-USA Salary & Fringe Benefit Survey, which showed the first median income decline for U.S. IEEE members in 31 years, revealed that people in industries reporting the largest drop in income also reported the highest percentage of unemployment because of offshoring. The following chart illustrates this:

Industry Displacement	% Drop in Income	% Offshoring
Electrical/Electronic Manufacturing	2.5	16.2
Computers	2.4	17.4
Communications	1.8	15.2

"This data supports our contention that offshoring not only contributes significantly to U.S. high-tech unemployment, but also suppresses wages," IEEE-USA President Gerard Alphonse said. "Our concerns extend beyond job loss and depressed incomes to threats to our nation's innovation infrastructure. Because innovation tends to follow jobs, key drivers of our economic prosperity could be lost."

The 2004 Unemployment Survey was sent to 5,329 U.S. IEEE members who reported being laid off at some point in the 2003-04 membership year. This represents an 80.3 percent increase in members reporting unemployment over the 2002 survey. Dr. Laura Langbein, a professor of public affairs at The American University in Washington, D.C., analyzed and reported the results, which are posted at

<http://www.ieeeusa.org/careers/pdf/EmploymentSurvey2004Report.pdf>

Other findings reveal that 37 percent of the 988 respondents said they considered leaving engineering entirely, and 41 percent said they would not recommend the profession to their children.

"Another trend is that employers are providing much less severance for laid-off workers than they did before," Langbein wrote. "Severance was provided in only 54 percent of the cases (compared with 90 percent in 2002) and extended benefits in only 27 percent of the cases (compared with 48 percent in 2002)."

NJ Consultants' Network:

Marketing Ideas Workshop

On May 26, 2005, the IEEE Consultants' Network of Northern NJ (CNNNJ) will host a Marketing Ideas Workshop. The workshop will be led by Peter Schutz.

About the Workshop

Marketing and sales are some 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 to visit companies in the area, special challenges we are confronted by, and associated ideas. If time permits, we will also hold a discussion on basic sales and marketing practices that we, as individuals, have found to be helpful.

Join our workshop and give us your ideas so that CNNNJ can provide you the best value for your membership dollars! This meeting was originally planned for February 2005 but was canceled due to inclement weather.

About the Panelist

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, May 26, 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>.



The 14th Annual Wireless and Optical Communications Conference (WOCC)
April 22 - 23, 2005 at Wyndham Newark Airport Hotel, Elizabeth, New Jersey, USA

Conference Theme: Convergent Communications

Conference Chair:

Tien-Pei Lee, Telcordia (Retired)

Conference Organizer:

Kevin Lu, Telcordia

Technical Program Chairs:

Qi Bi, Lucent

Heather Yu, Panasonic

Deyu Zhou, Opnext

Conference Coordinator:

Xiaomei Qian, Amaranth

Sponsored by:

- IEEE Communication Society
- IEEE North Jersey Section – Communications Chapter
- Chinese Institute of Engineering – U.S.A.
- The Photonics Society of Chinese Americans
- Chinese Association of Science and Technology
- Chinese American Academic and Professional Society
- Monte Jade Science and Technology Association

The fourteenth Annual Wireless and Optical Communications Conference (WOCC) will bring together technical experts and business leaders from the North America and the 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.

Wireless Sessions:

- Broadband Wireless ■ Wireless Ad Hoc Networks ■ Wireless and Wireline Convergence ■ Wireless Mobile Communications

Optical Sessions:

- Enabling Technologies for Optical Communications and Networks
- Optical Communications and Network Systems ■ Applications of Fiber Optical Communications ■ Optoelectronics and Network Elements

Multimedia Sessions:

- What's Next in Wireless Multimedia ■ Digital Wireless Multimedia
- Emerging Multimedia Technologies ■ Interactive Multimedia

Advanced Program and Registration:

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

IEEE AWARDS RECEPTION

*North Jersey Section
May 1, 2005
Birchwood Manor, Whippany NJ*

*A time to relax, unwind and enjoy --
A time to pay tribute to our new Fellows --
A time to honor our Award Winners --
YES it's time for the Annual Section Reception*

The Annual Section IEEE Awards Reception will be held at the Birchwood Manor, 111 North Jefferson Road, Whippany again this year. The affair is scheduled for **Sunday, May 1, 2005** from 3 to 6 PM. Tickets are \$35.00 each. Spouses and guests are welcome. We are limited to 90 attendees, so please make your reservations early.

Reservations are required by April 20, 2005. Complete the reservation form and return it with your payment. If you would like tickets mailed back to you, please enclose a self-addressed **stamped** envelope. Otherwise, your tickets will be held at the door for you. If any additional information is required concerning the reception, contact Anne Giedlinski at (973) 377-3175.

Use this form for Reception reservations. **ENCLOSE A SELF-ADDRESSED STAMPED ENVELOPE to receive tickets in advance. Reservations are required by April 20, 2005.**
Mail reservation request to:

Anne Giedlinski
299 Brooklake Road
Florham Park, NJ 07932

Enclosed is _____ for _____ ticket(s) at \$35.00 each (make check payable to **North Jersey Section IEEE**) for:

NAME: _____

ADDRESS: _____

Yes, please send me directions to the Birchwood Manor

NJ Power Engineering Society/Industry Applications Society

Motor And Motor Controls Seminar

The PES and IAS Chapters will sponsor a two-part seminar covering Motor and Motor Controls. The sessions will be held on two Fridays, April 29 and May 20 at The PSE&G Training Center in Edison, NJ.

The seminar will cover the design and application, protection and control of three-phase motors.

Topics

Day 1

- ✓ Operating conditions, insulation, voltage unbalance
- ✓ Three phase motor theory
- ✓ Protection (fuses, breakers, MCP, overloads)
- ✓ NEMA Premium Efficiency motors

Day 2

- ✓ Solid State Starting
- ✓ Speed control, harmonics, inverter-grade motors
- ✓ Testing, maintenance and repair

About the Instructor

The instructor will be John Hyfantis, President of Energistics LLC. Prior to forming Energistics in 1978, John's responsibilities included engineering and management positions with Electronic Associates, RCA-Astro, Dow Jones & Co., and Johnson & Johnson. John has conducted this course previously for PSE&G, Conectiv, NYSEDA, Northeast Utilities, Hoffmann-La Roche and Schering-Plough.

Mr. Hyfantis is past President and Chairman of the Board of Trustees of the Energy Expo Inc. He is also a charter member and twice past president of the New Jersey Association of Energy Engineers.

His educational credits are a BS degree in Electrical Engineering from Lafayette College, 1960, and a Masters degree in Management from New York University, 1970. He is a Certified Energy Manager, and is a registered Professional Engineer in New Jersey, New York, Connecticut and Pennsylvania.

The registration fee for this two-part seminar prior to April 15th will be \$175 for non-IEEE members, \$125 for IEEE Members, \$100 for GOLD Graduates (last 1-10 years) and \$25 for students with valid ID. The fee will be waived for IEEE Life Member Grades with verification at the seminar. Registrations received after April 15th must include an additional late fee of \$25. The seminar fee includes lunch, refreshments and handouts. Non-members joining IEEE within 30 days of the seminar will be rebated 50% of the IEEE registration charge.

If desired, IEEE Continuing Education Units will be offered for this course - a small fee of \$15 will be required for processing. A total of 1.2 CEUs will be offered. Please indicate if desired below.

Time: 9:00 AM to 3:30 PM with lunch provided at noon, Friday, April 29, 2005 & Friday, May 20, 2005.
Place: PSE&G Training Center, 234 Pierson Avenue, Edison, NJ.
Directions: www.pseg.com/customer/business/small/facility/edison_directions.jsp
Information: Ronald W. Quade, PE, (732) 205-2614 or rwquade@ieee.org.

Registration: Motor Seminar 4/29/2005 & 5/20/2005

Register via US mail to: Ronald W. Quade, PE
Eaton Electrical
379 Thornall St, 8th Floor
Edison, NJ 08837

Name _____

Address _____

Phone _____ Email _____

IEEE # _____ Student @ _____ Non IEEE _____ Life Member _____

Continuing Education Units: _____ Yes \$15 _____ No

If CEUs are chosen, please include a \$15 processing fee

Payment Enclosed \$ _____ Add \$25 late registration after April 15th

Make checks payable to North Jersey Section IEEE