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

THE IEEE NORTH JERSEY SECTION NEWSLETTER

Vol. 60, No. 9 OCTOBER 2013

In this Issue

A Note from the Chair

I would like to introduce you to IEEE Day, the annual day of events held worldwide celebrating the IEEE. IEEE Day is October 1. IEEE Day is an event for IEEE member's to share their excitement, vision and joy with the world. It is the fourth time in history when engineers worldwide celebrate the anniversary of the first time IEEE members gathered to share their technical ideas in 1884! The IEEE Day Committee and Section Ambassadors of IEEE Day 2013 would like you to join us in this celebration on October 1, 2013. Please help the IEEE Day 2013 team spread this message and motivate your IEEE colleagues to be part of this year's celebration. The theme of IEEE Day 2013 is "Leveraging Technology for a Better Tomorrow." Visit http://www.ieeeday.org for further information about IEEE Day 2013.

Keep your calendar marked for the 27th Annual MTT-S/APS Symposium and Mini Show on Thursday, October 3, 2013, at the Hanover Manor in East Hanover, NJ. We are featuring several technical papers from IEEE Distinguished Lecturers and Industry Leaders. The exhibitions have expanded to nearly 40 exhibition tables. Details are available at:

http://sites.ieee.org/northjersey/events/2013-ap-mtt-symposium.

I want to also commend the Societies and Sections who were involved in the First Annual IEEE North Jersey Advanced Communications Symposium, held at Stevens Institute of Technology in Hoboken, NJ, on Saturday, September 21. I know I am looking forward to the next Symposium, next year.

It gives me great pleasure and pride that our section is presented with the IEEE MGA Outstanding Large Section Award. This award is presented to one Section within the IEEE worldwide.

Russell Pepe (right), accepting the IEEE MGA Outstanding Large Section Award from Region 1 Director-Elect Vince Socci.

The Award was presented by Vince Socci, Region 1 Director Elect, to Russell Pepe, IEEE North Jersey Section Chair, during the Region 1Board of Governors Meeting in Providence, RI on August 24, 2013.

Remember to make note of the special celebrations next year for the 60th Anniversary of the North Jersey Section. We are in the stages of finalizing some of the events. Keep reading the Newsletter for details. We will keep you posted, as the details unfold. Please feel free to contact me. My e-mail is always open.

Sincerely,

Russell C. Pepe

Chair, IEEE North Jersey Section

rcpepe@ieee.org

Calendar of Events

- **October 2, 6:00 PM to 8:45 PM: IEEE North Jersey Section EXCOM meeting at NJIT, Newark, NJ**
  Location: NJIT - ECE 202, 161 Warren Street, Newark, NJ 07102 Getting to NJIT
  Contact: Russell Pepe (rcpepe@ieee.org), Chris Peckham **cdp@ieee.org and/or** Adriaan J. van Wijngaarden, (**avw@ieee.org**)
  Read More…
- **October 3, 8:30 AM to 5:00 PM: IEEE MTT/AP - 28th Annual Symposium and Mini-Show**
  Location: Hanover Manor, 16 Eagle Rock Avenue, E. Hanover, NJ 07936
  Contact: Kirit Dixit (201-669-7599), Russell Pepe (201-960-6796), Har Dayal (973-628-7394), Ajay Poddar (973-881-8800) and George Kannell (973-437-9990). **Read More…**
- **October 9, 6:30 PM to 8:45 PM: PACE – About Iraq – First Hand Info From an Engineer Who Has Been There - Imad Shabeeb, an Engineer from Iraq**
  Location: Clifton Memorial Library, 292 Piaget Ave, Clifton, NJ 07011 Getting to Clifton Library
  Contact: Paul Ward, (973)-790-1625, (pward1130@aol.com) Richard F. Tax, (201)-664-6954 (rtax@aea.net) Read More…
- **October 10, 6:30 PM to 8:30 PM: IEEE Consultants – How To Succeed in Sales Engineering - Russell Pepe co-owner and sales engineer with Advanced Technical Marketing (ATM)**
  Location: Morris County Library, 30 East Hanover Ave, Whippany, NJ 07981 Getting to Morris County Library
  Contact: Russell Pepe (201-960-6796), rcpepe@ieee.org Read More…
- **October 16, 5:30 PM to 9:00 PM: IEEE SAC, MGA, Region 1 – iSTEP-Integrated Student Transition to Engineering/Technology Professional Program**
  Location: Muscarelle Center, Room 105, Fairleigh Dickinson University (FDU)-Metropolitan Campus-Teaneck, 1000 River Road, Teaneck, NJ 07666 Getting to FDU
  Contact: John Taylor (john.taylor1204@gmail.com), Daniel Cerone (dcer@dcerone.com) Read More…
- **October 16, 6:00 PM to 8:00 PM: MTT/AP-S, ED/CAS – "More-than-Moore": Role of Low-frequency Noise in Semiconductor Devices - Purushothaman Srinivasan - GLOBALFOUNDRIES**
  Location: NJIT - ECE 202, 161 Warren Street, Newark, NJ 07102 Getting to NJIT
  Contact: Dr.-Ing. Ajay Kumar Poddar, Phone: (201)560-3806 (akpoddar@ieee.org), Prof. Edip Niver (973)596-3542 (edip.niver@njit.edu), Prof. Durgamadhav Misra (dmisra@njit.edu), Read More…
- **October 22, 6:00 PM to 9:00 PM: IEEE Princeton/Central NJ BT, NNJ COMSOC, VTS – HD Radio Technology – Background and Implementation - Tom Ray of Tom Ray Broadcast Consulting**
  Location: Bell Laboratories, Alcatel-Lucent, Main Building, Room Number: 6A-106, 600 Mountain Avenue, Murray Hill, NJ 07974, Getting to Bell Labs
  Contact: Joe Stack at (609) 647-9677, Mani Iyer (mani.iyer@alcatel-lucent.com) and/or Adriaan van Wijngaarden (avw@ieee.org) Read More…
- **October 23, 6:30 PM to 9:00 PM: IEEE Princeton/Central NJ BT, NNJ COMSOC, VTS – Very-Near-Field Solutions for Far-Field EMC Problems - Cedric Caudron of EMSCAN**
  Location: NJIT - ECE 202, 161 Warren Street, Newark, NJ 07102 Getting to NJIT
  Contact: Emad Farag, (enfarag@ieee.org) Read More…
- **October 31, 11:30 AM to 2:30 PM: North Jersey Section and PES/IAS Life Grade Luncheon**
  Location: Hanover Manor, 16 Eagle Rock Avenue, E. Hanover, N J07936
  Contact: Ken Oexle at *k.oexle@ieee.org* Read More…
- **November 6, 6:00 PM to 8:45 PM: IEEE North Jersey Section EXCOM meeting**
  Location: Clifton Public Library - Allwood Branch, Activity Room, 44 Lyall Road, Clifton N J 07012
  Contact: Russell Pepe (rcpepe@ieee.org) and/or Adriaan van Wijngaarden (avw@ieee.org) Read More…
- **November 11, 6:00 PM to 8:00 PM: MTT/AP-S, TMC, ED/CAS, Photonics - Starting a small business high-tech Electronics company - Abhay Joshi, President & CEO of Discovery Semiconductors, Inc.**
  Location: NJIT - ECE 202, 161 Warren Street, Newark, NJ 07102 Getting to NJIT
  Contact: Dr.-Ing. Ajay Kumar Poddar, Phone: (201)560-3806 (akpoddar@ieee.org), Prof. Edip Niver (973)596-3542 (edip.niver@njit.edu), Prof. Durgamadhav Misra (dmisra@njit.edu), Dr. Naresh Chand (Naresh.Chand@huawei.com)
  Read More…

- **Prior registration is encouraged and appreciated. You do not have to be an IEEE member to attend any event.**
- **For up to date information, visit our website: IEEE North Jersey Section and visit: vTools Registration**

Meeting Announcements

October 2, 2013

IEEE North Jersey Section EXCOM meeting – at NJIT, Newark, NJ

This executive committee (EXCOM) meeting of the IEEE North Jersey Section will be held at the New Jersey Institute of Technology (NJIT), in Newark, NJ. The meeting will take place in the ECE Building, Room ECE-202, at 161 Warren Street, Newark, NJ 07102

There will be a get-together with a buffet starting at 6 PM.

The meeting starts at 7 PM EST and typically ends at 8:45 PM. The meeting is meant to discuss and coordinate the section's activities and new initiatives.

Everyone is welcome to attend this meeting.

Please register in advance for this meeting using VTOOLS to provide the meeting organizers an accurate head count. You can change/cancel the registration if your plans change.

For more information, please contact Russell Pepe (rcpepe@ieee.org), Chris Peckham (cdp@ieee.org) and/or Adriaan van Wijngaarden (avw@ieee.org).

Location: NJIT-ECE 202, 161 Warren St, Newark, NJ 07102
Getting to NJIT
Time: 06:00 PM to 08:45 PM
06:00 PM - 07:00 PM - Get-together and Buffet
07:00 PM - 08:45 PM - Meeting
No Admission Charge
Contact: Russell Pepe (rcpepe@ieee.org), Chris Peckham (cdp@ieee.org), Adriaan J. van Wijngaarden, (avw@ieee.org**)**

For Updates and Registration - Click Here

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October 3, 2013

IEEE MTT/AP - 28th Annual Symposium and Mini-Show

Agenda: Selected topics in microwave technologies for commercial and military applications

Location: Hanover Manor, 16 Eagle Rock Avenue, E. Hanover, NJ 07936
Time: 08:30 AM to 05:00 PM:
Contact: Kirit Dixit (201-669-7599), Russell Pepe (201-960-6796), Har Dayal (973-628-7394), Ajay Poddar (973-881-8800) and George Kannell (973-437-9990).

For Updates and Registration - Click Here

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October 9, 2013

IEEE PACE presents: Engineers meet- Foreign Engineers' History and Opportunities? We are all in this together

Speaker: Imad Shabeeb, an Engineer from Iraq

Abstract: Engineers are engineers and most face similar issues. It makes no difference what you are, who you are or where you came from. Age, race, creed or origin; Engineers all face the same issues and problems and seek unity, professional jobs and opportunities.

Where lay the problems? Come and meet Mr. Shabeeb. We met Mr. Shabeeb at our previous PACE meeting. Join us this month and meet some other experienced people.

This presentation discusses how workers find their way into the U.S. and how they struggle during the first few years. In this presentation, Imam, an Iraqi engineer, will provide his view on the Iraq war and what is going on in the Middle East. What is going on in the Middle East, and what was going on prior to the last decade? He will discuss the education system in Iraq and compare it to the education system in the US. He will also discuss how qualified foreign engineers are in relation to American engineers. He will speak about jobs engineers have in Arab countries, Iran, and Turkey and what experience they need.

Come and join other Section professionals for the talk and refreshments.

Biography: Imad Shabeeb worked for the US army in Iraq for a couple of years, was injured twice doing combat missions, lost family members, and was then granted a Special Immigrant Visa (SIV) with a greencard upon arrival in the U.S. He received this for serving with the US army and because of the risk of staying in Iraq after being affiliated with the US government.

He graduated with a BSEE and a GPA of 3.07 (evaluated here) from the University of Baghdad. He had started graduate work for a master's degree at the University of Baghdad when the war started in 2003, and his education ended. In 2005, Imad started working for the US Army, and, in 2009, he went back to school to do the last steps to get his degree. He arrived in the U.S. in 2010.

He has applied for an EIT license test, taught, and did entry-level jobs, and is still struggling to find a stable engineering position or an open-minded employer who is not looking for cheap engineering labor and foreign engineers with an unstable visa status.

Members and students from other professional societies and engineering disciplines are always welcome. We now include members from IEEE, ASME and AEA. One does not have to be a member of the IEEE or the North Jersey Section to attend.

We encourage all to attend.

Refreshments: Pizza and refreshments will be served during the mid-meeting break.

CARE is the Congressional Advocacy Recruitment Effort **CARE** is a voluntary network of IEEE members who are interested in public policy.

For information go to: www.ieeeusa.org/policy/care/

Location: Clifton Memorial Library, 292 Piaget Ave., Clifton, NJ 07011 (973-772-5500) Getting to Clifton Library

Time: 06:30PM to 08:45PM (No Admission Charge)

Contact: Paul Ward, 973 790-1625. pward1130@aol.com, Richard F. Tax, 201- 664-6954, rtax@aea.org

For Updates and Registration - Click Here

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October 10, 2013

IEEE Consultants' Network of Northern New Jersey: How to Succeed In Sales Engineering

Speaker: Mr. Russell Pepe, co-owner and sales engineer, Advanced Technical Marketing (ATM)

Abstract: This talk will cover issues, both technical and managerial, that an Engineer must face in order to make a successful career move into Sales. The presentation will focus on points, both overt and subtle, that are seen with regard to successful Sales Engineers.

The needs to develop a working strategy and a personal style will be covered. Discussions will include the mechanics of success, the measurements of activity, account identification, networking, investigation methods, required tools and resources, pricing issues and dealing with competition.

Biography: Mr. Russell Pepe is currently the co-owner and sales engineer with Advanced Technical Marketing (ATM). ATM is a Manufacturer's Representative Company covering the Northeast.

ATM's products include Test Equipment, Components, Modules, Sub-Systems and Engineering Services, spanning technologies from RF, Microwave, Fiber Optics, EMC and Embedded Systems.

Mr. Pepe has over 35 years of engineering experience, with about 20 years in sales. Russell received a BSEE and MSEE from NJIT. He has been a Member of the IEEE for 40 years and was recently elected as the IEEE North Jersey Section Chair for 2013/2014.

Russell can be reached at 201-960-6796 or at rcpepe@ieee.org

ABOUT THE NETWORK: Founded in 1992, the IEEE Consultants Network of Northern NJ encourages and promotes the use of independent technical consultants by business and industry. (www.TechnologyOnTap.org),

Location: Morris County Library, 30 East Hanover Ave, Whippany, NJ 07981 Getting to Morris County Library **Time:** 06:30PM – 08:30PM

Contact: r.d.walker@ieee.org

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October 16, 2013

MTT/AP-S, ED/CAS Present:

"More-than-Moore": Role of Low-frequency Noise in Semiconductor Devices

Speaker: Purushothaman Srinivasan, GLOBALFOUNDRIES

Abstract: "More-than-Moore": Role of Low-frequency Noise in Semiconductor Devices

In this era dominated by semiconductor products in consumer electronics space, apart from device area scaling, various functions need to be integrated in a chip. The need for such combined functionalities in a Low Power System-On-Chip (SoC) translates into dual trend (i) miniaturization of digital functions defined as "More Moore" and (ii) functional diversification called as "More-than-Moore" by International Technology Roadmap for Semiconductors (ITRS). This has now become a critical requirement of any semiconductor product. One such combined functional requirement would be to have analog and digital functions in a chip. This talk will discuss one of the key metric required for analog function – low frequency noise. Low-frequency noise has a significant impact on device reliability in analog domain in this functional diversification process ("More-than-Moore"). Low-frequency noise manifests primarily as flicker noise in Metal-Oxide-Semiconductor (MOS) devices and upconverts to phase noise in circuits. Flicker noise, also called as 1/f noise, is an important device metric towards RF and analog performance of low power circuits, such as operational amplifiers, mixers and oscillators. In addition, due to continued channel length scaling and oxide scaling ("More Moore"), this parameter is critical in mixed signal and digital applications as its affects signal-to-noise ratio and jitter. This discrete form of flicker noise, also called as Random Telegraph Signals (RTS), affects Static Random Access Memories (SRAMs), which limits its functionality. The first part of the talk will discuss the concept of flicker noise and RTS from a fundamental perspective. The basic method for characterizing flicker noise and its modeling methods will be shown. The impact of device layout, process and geometry affecting flicker noise will be discussed followed by its circuit implications. The role of RTS in advanced CMOS devices and their impact on SRAM bitcell will be discussed. Understanding of flicker noise variability is equally important as flicker noise itself. The second part of the talk will discuss this aspect in detail. The flicker noise variability due to die-to-die and wafer-to-wafer variation will also be discussed. The third part of the talk will discuss the circuit implications of flicker noise. In this context, the physics behind large signal cyclostationary noise under circuit operating conditions and their impact will be dealt with in detail. The impact of noise in operational amplifiers, voltage reference and oscillators will also be discussed. The talk will conclude with a real-time case study of how flicker noise at device level affects the phase noise of an oscillator circuit.

Biography: Dr. Purushothaman Srinivasan (SP) is a Member of Technical Staff (MTS) in the Device Reliability Group at GLOBALFOUNDRIES, Malta since Feb 2013. He is also a GLOBALFOUNDRIES assignee member of the Pre-T0

alliance at IBM, Albany. From 2007-2013, he was a research staff member at Texas Instruments, Dallas. He is also an Executive Committee member and Membership Chair of Dielectric Science and Technology Division at ECS. His activities also include organizer for ECS graphene symposia and More-than-Moore symposia. He is also a liaison member of various SRC projects. Prior to joining TI, he obtained his PhD degree from IMEC, Leuven, Belgium and New Jersey Institute of Technology, Newark, NJ in 2007. He won the Hashimoto Prize for his best doctoral dissertation in 2007. He is also a senior member of IEEE, has edited 4 books, authored and co-authored more than 80 international publications, including IEDM and VLSI conferences. He also serves as a reviewer for at least 6 journals, including the *Journal of The Electrochemical Society* and the *IEEE Transactions on Electron Devices*.

Location: NJIT - ECE 202, 161 Warren Street, Newark, NJ 07102 Getting to NJIT

Time: 06:00PM to 08:00PM
6:00 pm - 6:15 pm - Get-together and Buffet
6:15 pm - 7:15 pm – Talk/Presentation
All are welcome. No Admission Charge

Contact: Dr.-Ing. Ajay Kumar Poddar, Phone: (201)560-3806 (akpoddar@ieee.org),

Prof. Edip Niver (973)596-3542 (edip.niver@njit.edu),

Prof. Durgamadhav Misra (dmisra@njit.edu),

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October 16, 2013

IEEE SAC, MGA, Region 1 – iSTEP-Integrated Student Transition to Engineering/Technology Professional Program

Agenda: iSTEP, the Integrated Student Transition to Engineering/Technology Professional program, provides students, industry professionals, and IEEE leaders the opportunity to share career experiences at one venue. Learn how IEEE can shape your future, and provide career development tools to help you succeed, at our iSTEP mini-conference listed below. Attend and glean wisdom from local industry and IEEE leaders in mentoring breakout sessions where they can help you navigate through the professional world to realize your aspirations**.**

5:30 PM	**Welcome, Refreshments and Networking**
6:00 PM	**Introduction**
	R. Pellegrino, *IEEE Region 1 Southern Area Chair*
6:10 PM	**"IEEE One Voice" Video**
6:15 PM	**Keynote Presentation – Scalability of Your IEEE Membership**
	Dr. Charles Rubenstein, *Past-Director, IEEE Region 1*
6:45 PM	**Introduction of IEEE Organization, Membership Benefits,**
	GOLD Program and Volunteering Opportunities
	R. Pellegrino, *IEEE Region 1 Southern Area Chair*
7:15 PM	**Panel Session – Mentoring for Professional Development**
8:00 PM	**Concluding Remarks**

Location: Muscarelle Center, Room 105, Fairleigh Dickinson University (FDU)-Metropolitan Campus-Teaneck, 1000 River Road, Teaneck, NJ 07666 Getting to FDU

Time: 5:30 PM to 9:00 PM

Contact: John Taylor (john.taylor1204@gmail.com), Daniel Cerone (dcer@dcerone.com)

For Registration and Updates - Click Here

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October 22, 2013

IEEE Princeton/Central NJ BT and IEEE North Jersey COMSOC, VTS Chapters present – HD Radio Technology – Background and Implementation

Speaker: Tom Ray, Tom Ray Broadcast Consulting

Abstract: Tom Ray will be giving a presentation on HD Radio. The presentation starts with an introduction to HD Radio, what it is and how it coexists with present-day AM and FM transmissions. The presentation will include a few audio clips of normal AM radio and HD AM radio. Tom put WOR, New York on the air in HD.

This meeting will be held at Bell Laboratories, Alcatel-Lucent, in Murray Hill, NJ. The meeting will take place in Room 6A-106, which is located near the main entrance behind the Bell Labs Showcase exhibition area. It is not necessary to sign in at the registration desk to access this area.

There will be a get-together starting at 6 pm.

Everyone is welcome to attend this meeting.

Please register in advance for this meeting using VTOOLS to provide the meeting organizers an accurate head count. You can change/cancel the registration if your plans change.

For more information, please contact Joe Stack at (609) 647-9677, Mani Iyer (mani.iyer@alcatel-lucent.com) and/or Adriaan van Wijngaarden (avw@ieee.org).

Biography: Tom Ray spent the past 15 1/2 years as Corporate Director of Engineering for Buckley Broadcasting and Chief Engineer of WOR Radio in New York City. During his time at

WOR, he completely rebuilt the facility, from microphones to the top of the towers, and moved both the studios and transmitter facility of WOR, a 50,000 Watt Heritage AM radio station. He was responsible for the entire Engineering and Operations departments of WOR, in addition to overseeing the technical operations of Buckley's 18 radio stations on the east and west coasts.

While at WOR, Tom pioneered AM HD Radio, and WOR was the first high power AM HD Radio station in the world. His book, "HD Radio Implementation" (Focal Press) was written to guide Engineers in installing this new transmission medium at their facilities and, more importantly, making it work. WOR was held in esteem by iBiquity Digital Corporation and was used in many experiments with new radios for HD Radio.

He also pioneered the use of MDCL technology which allows AM stations to decrease their carrier power during times of high modulation, saving up to 37% of the power used by an AM transmitter.

Tom presently runs Tom Ray Broadcast Consulting offering technical services to radio stations, in addition to being a sales rep for Burk Technology remote control systems and Timeline Digital Audio codecs, the EAS Coordinator/ABIP Program Coordinator and Engineering Consultant for the New York State Broadcaster's Association, is the EAS Consultant for the City of New York, and is the Chief Engineer for the Ron Ananian: The Car Doctor radio program heard on 75 affiliates nationwide. He is an avid Ham Radio operator (W2TRR), is Vice President of the Orange County (NY) Amateur Radio Club, is the VE Liaison for the Orange County Amateur Radio Club, is the ham repeater frequency coordinator for New York State, and once yearly, tunes the flag pole in Cronomer Hill Park in Newburgh, NY to the 40 meter ham band for use as an antenna during Field Day.

Location: Bell Laboratories, Alcatel-Lucent, Main Building, Room Number: 6A-106, 600 Mountain Avenue, Murray Hill, NJ 07974, Getting to Bell Labs
Time: 06:00 PM to 09:00 PM:
Contact: Joe Stack at (609) 647-9677, Mani Iyer (mani.iyer@alcatel-lucent.com) and/or Adriaan van Wijngaarden (avw@ieee.org)
For Registration and Updates - Click Here

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October 23, 2013

IEEE IMS Chapter presents – Very-Near-Field Solutions for Far-Field EMC Problems

Speaker: Cedric Caudron of EMSCAN

Abstract: Very-near-field measurements of radiated emissions are fast and easy to make and avoid the delays and the time consuming set-up of far-field measurements in a chamber. Very-near-field measurements allow EMC testing in less than one second! Using these techniques a designer can get an "emissions map" of a PCB or product in "real-time" to solve EMI and EMC problems early in the design cycle thus saving time and cost. In addition far-field prediction based on very-near-field measurements provide engineers with the world's fastest pre-compliance verification. A demonstration of an actual "real-time" EMxpert will be shown

Biography: Cedric Caudron is an Application Engineer at EMSCAN with over 10 years of experience in RF design, EMC, Integrated Circuit and field support. He has been working with various well known companies such as STMicroelectronics, Intel and Sagem Defense Security across the UK, France, China, Canada and the United States.

Cedric holds a BEng Honors in Electrical and Electronics from the University of Wales in Cardiff UK and an M.Sc in Control Engineering from Coventry University.

Location: NJIT - ECE 202, 161 Warren Street, Newark, NJ 07102 Getting to NJIT

Time: 6:30 PM to 9:00 PM

Contact: Emad Farag, (enfarag@ieee.org)

For Registration and Updates - Click Here

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October 31, 2013

IEEE North Jersey Section and PES/IAS Life Grade Luncheon

Agenda: Book editors A. Michael Noll and Michael N. Geselowitz will describe their book "Bell Labs Memoirs: Voices of Innovation."

Their book consists of biographical and autobiographical portraits of twelve people who worked at Bell Telephone Laboratories in Murray Hill, NJ during the 1960s. The people presented include a glass blower, a limousine driver, a patent attorney, research vice president, and scientists. The counties represented range from the United States to England, India, and Germany.

One objective of the book is to tell the story of Bell Telephone Laboratories through the lives of a representative group of people who actually worked there. Another objective of the book is to honor the memory of William O. Baker who headed the research organization at Bell Telephone Laboratories from 1955 to 1973 – a period some consider the "golden years" of Bell Labs.

They will also discuss the fate of Bell Telephone Laboratories, Inc. (1925-1984), the innovations produced there, and the factors that made the place so unique.

Advanced registration is required prior to October 24th for 30 only in order of receipt. A hard copy form can be requested from Ken Oexle at k.oexle@ieee.org

Location: Hanover Manor, 16 Eagle Rock Avenue, E. Hanover, NJ 07936

Time: 11:30 AM to 2:30 PM

Contact: Ken Oexle at k.oexle@ieee.org

For Updates and Registration - Click Here

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November 6, 2013

IEEE North Jersey Section EXCOM meeting – at Clifton, NJ

Agenda: This executive committee (EXCOM) meeting of the IEEE North Jersey Section will be held in the Activity Room of the Clifton Public Library (Allwood Branch, 44 Lyall Road, Clifton, NJ 07012, T: (973) 471 0555).

There will be a get-together with a buffet starting at 6 pm.

The meeting starts at 7 pm EST and typically ends at 8:45 pm, when the library closes. The meeting is meant to discuss and coordinate the section's activities and new initiatives.

Everyone is welcome to attend this meeting.

Please register in advance for this meeting using VTOOLS to provide the meeting organizers an accurate head count. You can change/cancel the registration if your plans change.

For more information, please contact Russell Pepe (rcpepe@ieee.org) and/or Adriaan van Wijngaarden (avw@ieee.org).

Location: Clifton Public Library - Allwood Branch, Activity Room, 44 Lyall Road, Clifton NJ 07012

Getting to Clifton Public Library

Time: 06:00 PM to 08:45 PM:

Contact: Russell Pepe (rcpepe@ieee.org) and/or Adriaan van Wijngaarden (avw@ieee.org)

For Registration and Updates - Click Here

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November 11, 2013

MTT/AP-S, TMC, ED/CAS, Photonics - Starting a small business high-tech Electronics company

Speaker: Abhay Joshi, President and CEO of Discovery Semiconductors, Inc.

Abstract: The speaker will share his experience of starting high tech company (Discovery Semiconductors) in 1993, and running it successfully for the past 20 years. Discovery Semiconductors is a world leader in 10 Gb, 40 Gb, 100 Gb Optical Receivers and has brought to market several new products spanning almost two decades.

The core technology for its products was developed through the Small Business Innovation Research (SBIR) program, and the company was awarded in year 2001 the Roland Tibbbett's award by the US Small Business Administration (SBA) for successful commercialization of the SBIR technology. Today, the company exports to over 30 countries, but has to adapt constantly to an ever changing international competitive landscape.

The talk will end by urging new graduate students and especially NJIT students to pursue the path of entrepreneurs, start their own ventures, and make their own dreams come true, including opening new job opportunities for the growth of stable economy and financial stability.

Biography: Mr. Joshi has extensive experience in high speed semiconductor device design and testing, specializing in the technology of InGaAs photodiodes (PIN), avalanche photodiodes (APD), balanced photodiodes, and ultra-fast read-out circuits for imagers. He was the Project Leader at EPITAXX for the European Space Agency's (ESA), "Project SCIAMACHY," an ambitious satellite project to study global warming. It was launched in 2002 on ESA's ENVISAT. As a project leader, he designed and developed unique 1024 element linear InGaAs detector arrays for 1-3 µm wavelength to detect green house gases such as CO, CO2, and CH4. He co-invented the Dual Depletion Region (DDR) photodiode structure in year 1994 which laid the foundations of Discovery Semiconductors.

As the president and CEO of Discovery Semiconductors, he has developed DDR photodiodes and photoreceivers for 10 Gb/s and 40 Gb/s digital systems as well as highly linear photodiodes (HLPD®) for analog applications. These photodetectors include balanced push-pull pairs, dual photodiodes, as well as monolithically integrated quad photodiodes.

Recently, from year 2006 to 2008, Mr. Joshi designed and delivered space qualified, 10 GHz, ultra-fast InGaAs photodiodes to Tesat Spacecom of Germany. The photodiodes are part of the ALADIN instrument for the ESA's AEOLUS mission to measure global wind profiles.

Mr. Joshi has been the Principal Investigator of several SBIR and STTR contracts granted by various agencies including DARPA, U.S. Air Force, U.S. Army, and NASA.

Mr. Joshi holds several patents in the United States, European Union, Japan, Canada, and India.

He has authored several technical publications and one book chapter.

Location: NJIT - ECE 202, 161 Warren Street, Newark, NJ 07102 Getting to NJIT

Time: 06:00 PM to 08:00 PM

Contact: Dr.-Ing. Ajay Kumar Poddar, (201)560-3806 (akpoddar@ieee.org),
Prof. Edip Niver (973) 596-3542 (edip.niver@njit.edu),
Prof. Durgamadhav Misra (dmisra@njit.edu),
Dr. Naresh Chand (Naresh.Chand@huawei.com)

For Registration and Updates - Click Here

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IEEE Pre-College activities present:

Pre-College Cyber Defense Competition

In support of the Section's IEEE Pre-College activities, the following is provided on the Air Force Association's CyberPatriot VI—The National High School Cyber Defense Competition.

The "Shooting Star" Chapter 195 of the Air Force Association will be sponsoring up to four Open Division high school CyberPatriot VI teams. CyberPatriot was created to help motivate students to pursue science, technology, engineering, and mathematics (STEM) through a high school cyber defense competition. The CyberPatriot VI is patterned after the

National Collegiate Cyber Defense Competition. Each high school team consists of a teacher/coach, two to five students, and up to five alternates.

The All Service Division (Jr ROTC units) and the Open Division (regular high school) team enrollment deadline is Oct 1st with competition dates scheduled for Nov 15th, Dec 6th, and Jan 17th. The final in-person all paid competition will be held at the AFA's CyberFutures Conference, at the Gaylord National Hotel and Convention Center, National Harbor, Md. March 26-30, 2014.

The Open Division enrollment fee per team is $385.00. However, for the first four high schools within Morris or Union Counties to fully enroll, the "Shooting Star" Chapter 195 will pay the enrollment fee. For more details and to enroll, see: http://www.uscyberpatriot.org/ . For AFA Chapter 195 info, contact Howard Leach, at h.leach@ieee.org, or 973-540-1283.

The Northrop Grumman Foundation is the Presenting Sponsor for Cyber-Patriot VI. CyberPatriot's founding partners are SAIC and CIAS at the University of Texas-San Antonio.

For schools outside of Morris and Union Counties, please contact the Section's Pre-College coordinator, Steve Majkowski, for potential support.

How to subscribe to this newsletter if you are not an IEEE North Jersey Member?

To subscribe, send an email to: listserv@listserv.ieee.org, with the body containing "subscribe northjerseypublic"

To unsubscribe, send an email to: listserv@listserv.ieee.org, with the body containing "signoff northjerseypublic"

Additionally, you can join the IEEE North Jersey Section Facebook Fan Page at: www.facebook.com/pages/IEEE-North-Jersey-Section

Follow us on Twitter at: twitter.com/ieeenorthjersey

Or join the LinkedIn IEEE North Jersey Section Group at: LinkedIn Group Invitation

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North Jersey Section Employment Network Announcement

Unemployed members can contact Suzanne McIntosh (skranjacmcintosh@yahoo.com) for assistance with their job search. The Employment Network's LinkedIn group is available for exchange of job leads and discussion of emerging technologies. Low-cost educational opportunities are available throughout the summer months on current high-demand technologies such as cloud computing, Hadoop, and analytics. Educational opportunities are flexible and can be expanded to address additional topics of interest. Please contact the chair for additional information.

Join our network by sending an email to Suzanne McIntosh (chair), at skranjacmcintosh@yahoo.com.

Suzanne will be happy to add you to our LinkedIn group, "IEEE North Jersey Section Employment Network".

Back to Calendar of Events

Welcome! New Members of the IEEE North Jersey Section

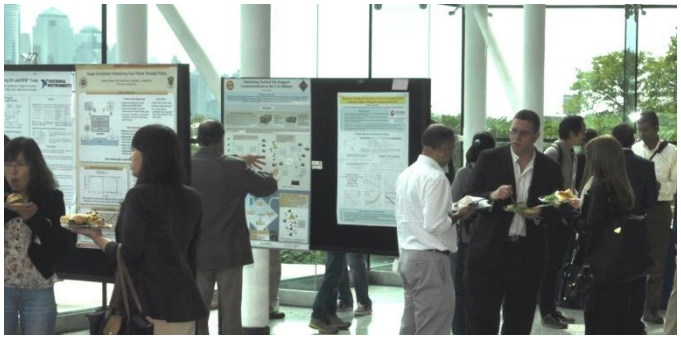
Full Name	IEEE Current Grade
Ahmet Taloupe Fall	Student Member
Fawaz Saaed Alassery	Graduate Student Member
Sebastian Alvarez - Ring	Student Member
Courtney J Bartlett	Associate Member
William Howard Becker	Member
Thomas Catanese	Member
Aruna Cheruvu	Member
Nikolai Chowdhury	Graduate Student Member
Mike Egbert	Graduate Student Member
Xin Gao	Graduate Student Member
Dimitrios Kikidis	Graduate Student Member
Yaovi Elom Kwasi	Graduate Student Member
Zheng Lyu	Graduate Student Member
Changhyun Lee	Student Member
Xuelian Liu	Graduate Student Member
Juan Llinas	Student Member
Parimal Patel	Member
Vrajeshri Patel	Graduate Student Member
Mihai Peterca	Member
Bin Qi	Graduate Student Member
Naomi B Robbins	Member
Genaro Salierno	Member
Mark Schoenberger	Member
Anthony Small	Member
Xiang Sun	Graduate Student Member
Chunyu Tang	Graduate Student Member
Michael Tennant	Member
Francisco A Varela	Member
Paul Wilkowski	Student Member
Gary N. Wang	Member
Chenxi Yang	Graduate Student Member
Wenbo Zhang	Graduate Student Member
Jie Zhang	Graduate Student Member
Mushtaq Ahmad Zuberi	Member

Back to Calendar of Events

First Annual IEEE North Jersey Advanced Communications Symposium is a Great Success!

The 2013 IEEE North Jersey Advanced Communications Symposium (NJACS) was held at the Babbio Center, Stevens Institute of Technology, in Hobokon, NJ, on Saturday September 21, 2013. The symposium consisted of eight invited presentations and a parallel poster session with 18 posters from students from ARDEC, CUNY, FDU, NJIT, NYU-Poly, Princeton, Rutgers-WINLAB, and Stevens Institute of Technology. The symposium was well attended, with 84 participants from New Jersey and New York.

Vice-Provost Constantin Chassapis (front-right) and Section Chair Russell Pepe (front-center) are among the attendees at NJACS.



The poster presenters explain their results during lunch.

The symposium program started at 8.45 am with opening remarks from the symposium chair, Amit Patel, the IEEE North Jersey Section Chair, Russell Pepe, and Stevens Institute of Technology Vice-Provost Dr. Constantin Chassapis. Program Chair, Mani Iyer introduced the invited speakers for the morning session: Sundeep Rangan (NYU Poly) on millimeter wave picocellular wireless networks, Predrag Spasojevic (WINLAB, Rutgers) on the localization of packet-based radio transmitters in space, time, and frequency, Silvija Kokalj-Filipovic (WINLAB, Rutgers) on an efficient scheme for multi-media broadcast multicast services and its analysis, and Howard Huang (Bell Laboratories, Alcatel-Lucent) on a throughput-optimal communication strategy for the wireless random access channel. During lunch, there was ample time for discussions with the participants and the poster presenters. The afternoon program was chaired by Nagi Naganathan and consisted of presentations by Tao Zhang (Cisco) on securing large-scale consumer vehicle networks, Geoffrey Smith (Proxim Wireless) on WIFI security, Krishnamurthy Raghunandan (MTA/New York City Transit) on cellular security, as well as a presentation by Professional Development speaker Bala Prasanna, which was made possible by IEEE-USA funding from membership dues. A summary of all presentations can be found at the end of this article.

In the closing remarks following the technical program, symposium chair Amit Patel introduced Stevens Professor Yu-Dong Yao, who announced the winners of the poster competition. The poster committee, chaired by Prof. Hong Man and further consisting of Frank Laslo, Irfan Lateef, Pitipana Sakarindr and Manu Malek, had evaluated the 18 posters by students from ARDEC, CUNY, FDU, NJIT, NYU-Poly, Princeton, Rutgers-WINLAB, and Stevens Institute of Technology. Prof. Yu-Dong Yao, on behalf of Poster Chair Prof. Hong Man, announced the poster prize winners:

First Place − Kuang Cai, Department of Electrical and Computer Engineering, Stevens Institute of Technology, for the presentation of the poster "Exploiting Outband Radiation for Channel Identification" (this was joint work with Hongbin Li and Joseph Mitola III).

Second Place − Mustafa Riza Akdeniz, Electrical and Computer Engineering Department, NYU Poly, for the presentation of the poster "Millimeter Wave Picocellular System Evaluation for Urban Deployments" (this was joint work with Yuanpeng Liu, Sundeep Rangan, and Elza Erkip).

Third Place − Jie Tian, Computer Science Department, New Jersey Institute of Technology, for the presentation of the poster "Scheduling Survivability-Heterogeneous Sensor Networks for Critical Location Surveillance" (this was joint work with Tan Yan and Guiling Wang).

All poster presenters received a certificate. The winners received a poster award certificate as well as a check of $ 400, $ 300, and $ 200, respectively.

Poster winners and symposium organizers − from left to right: Amit Patel, symposium chair, Yu-Dong Yao, local arrangements chair, Kuang Cai, Stevens Institute of Technology (poster award, first place), Jie Tian, NJIT (poster award, third place), Mustafa Riza Akdeniz, NYU-Poly (poster award, second place), and Mani Iyer, program chair.

In his closing remarks, Amit Patel thanked Stevens Institute of Technology for hosting the symposium and for the use of the Babbio Center, which proved to be an excellent venue for this symposium; the auditorium had the right size and was well equipped, and the unobstructed view of the New York skyline across the Hudson during the breaks was impressive. Amit Patel further thanked several IEEE organizations for financial and organizational support: the IEEE North Jersey Section and its Communications and Vehicular Technology Chapters, who had received additional financial support from the IEEE

Communications Society and the Vehicular Technology Society, and the Computer Chapter, as well as the IEEE New Jersey Coast Section's Computer, Communications, and AP/VTS/EMC Chapters. The symposium further received IEEE USA PACE Technical Chapter support.

Amit Patel further thanked all co-organizers and volunteers for their hard work that made the symposium a success. He thanked Mani Iyer, Program Chair and IEEE North Jersey Vehicular Technology Chapter Chair, Hong Man, Poster Committee Chair and the Poster Committee members Frank Laslo, Irfan Lateef, Pitipana Sakarindr and Manu Malek. He further thanked Yu-Dong Yao, Local Arrangements, and Jennifer Chen, for her help at the venue, Michael Newell, Registration Chair as well as Cheng Zheng, Yu Zhou, and Zhen Ni for all their help at the registration desk, the event coordinators Nagi Naganathan and Hannah Zhou, and Adriaan van Wijngaarden, Publicity, and volunteers from the IEEE New Jersey Coast Section: Krishnna Raghunandan (Section Chair, Speaker), Newman Wilson (Communications Society Chair), Frank Laslo (Section Secretary, ComSoc Membership Development), Kit August (Women in Engineering), Filomena Citarella (Joint AP/VT/EMC Chapter Chair) and Irfan Lateef (ComSoc Chapter Vice-Chair).

NJACS organizers and volunteers, from left to right: Yu-Dong Yao, Hannah Zhao, Amit Patel, Irfan Lateef, Frank Laslo, Nagi Naganathan, Adriaan van Wijngaarden, Michael Newell, and Mani Iyer.

IEEE NJ Coast Section volunteers, from left to right: Newman Wilson, Frank Laslo, Kit August, Filomena Citarella, Irfan Lateef, and Krishnna Raghunandan (Raghu).

Contact information, pictures, and slides of the presentations can be found at the symposium website:

http://sites.ieee.org/northjersey/events/2013-njacs.

Please contact the organizing committee or volunteers for any additional follow up questions or feedback on the event.

NJACS speakers and organizers, from left to right: Mani Iyer, Tao Zhang, Sundeep Rangan, Predrag Spasojevic, Howard Huang, Silvija Kokalj-Filipovic, Krishna Raghunandan (Raghu), Amit Patel and Nagi Naganathan.

Summaries of the Invited Presentations

Sundeep Rangan, an Associate Professor at the ECE Department of NYU Poly, presented material on millimeter wave picocellular wireless networks and the prospects of using millimeter wave (mmW) frequencies between 30 GHz and 300 GHz for next-generation micro- and picocellular wireless networks. The mmW bands offer orders of magnitude greater spectrum than current cellular allocations and enable very high-dimensional antenna arrays for further gains via beamforming and spatial multiplexing. However, the propagation of mmW signals in outdoor non-line-of-sight (NLOS) links remains challenging and the feasibility of wide-area mmW cellular networks is far from clear. Recent, real-world measurements at 28 GHz in New York City were used to provide a realistic assessment of mmW picocellular networks in a dense urban deployment. It was found that, even under conservative propagation assumptions, mmW systems with cell radii of 100 m can offer an order of magnitude increase in capacity over current state-of-the-art 4G cellular networks with similar cell density. However, it was also shown that such mmW networks may operate in a largely power-limited regime where the full spatial and bandwidth degrees of freedom are not fully utilized. This power-limited regime contrasts significantly with current bandwidth-limited cellular systems. In addition, the wide bandwidths and use of high-dimensional antenna arrays impose significant power and processing constraints in the RF front-ends. Various research questions were posed related to designing cellular systems with these limitations. This was joint work with Prof. Elza Erkip and Prof. Ted Rappaport. For more information on this topic, please check: http://arxiv.org/abs/1304.3963.

Predrag Spasojevic, an Associate Professor at WINLAB, ECE Department, Rutgers University, considered the localization of packet-based radio transmitters in space, time, and frequency in a scenario where one or more sensors observe a frequency band that is potentially used by multiple radio transmitters. The development of algorithms that analyze the signals detected at the sensors to estimate spectrum usage in space, time, and frequency was discussed. The proposed algorithms can be used for achieving efficient spectrum utilization by identifying unused portions of the spectrum in space, time and frequency as well as for other applications requiring spectrum monitoring. This was joint work with Goran Ivkovic and Ivan Seskar.

Silvija Kokalj-Filipovic, an Assistant Research Professor at WINLAB, ECE Department, Rutgers University, considered multi-media broadcast multicast services (MBMS), which is a point-to-multipoint interface specification for existing and

next-generation cellular networks. In the presentation, an efficient application layer coding scheme was presented that is suitable for the time-limited wireless broadcast framework of the MBMS standards. The scheme, referred to as doped broadcast, is based on Fountain codes and uses feedback to control the trade-off between reconstruction delay, broadcast overhead and decoding time/complexity. The doped broadcast scheme performs a limited-time broadcast followed by an individualized repair phase to ensure (possibly prioritized) quality of service (QoS) to most users. The goal of this two-phase scheme is not to improve on any particular performance metric where highly optimized standard recommendations already perform exceptionally well, but rather to enable flexible and transparent mechanisms to implement and control trade-offs between different performance metrics. Toward this goal, an analytically tractable model was developed for doped broadcast with ideal soliton-based codes providing repair strategy parameter estimation. The impact that inactivation and doping mechanisms employed by the decoder have on the complexity and overhead metrics was quantified and discussed for the proposed model. This approach guides a practical design tradeoff, which is important in today's highly heterogeneous environments requiring individualized QoS. This was joint work with Predrag Spasojevic and Emina Soljanin.

Howard Huang, a Distinguished Member of Technical Staff at Bell Laboratories, Alcatel-Lucent, presented a throughput-optimal communication strategy for the wireless random access channel. A wireless time-slotted random access channel was considered where user arrivals are characterized by a Poisson process. Each user comes with a fixed payload, which has to be transmitted in the slot in which it arrives. If the transmission is successful, the user leaves the system, else it is dropped. The receiver and users are assumed to have knowledge of the arrival rate, but they are not aware of the actual number of users simultaneously attempting to communicate during a given time slot. In contrast to a conventional slotted ALOHA-based strategy where the channel is partitioned into orthogonal sub-channels and each user communicates on a randomly chosen sub-channel, a novel strategy is proposed whereby users transmit simultaneously over the entire channel resource and the receiver jointly decodes the transmissions. Under the proposed strategy, neither users nor the receiver have prior knowledge of the active user set, and it is shown that this is optimal in terms of maximizing the average throughput among all uncoordinated strategies. Numerical results showed that the proposal provides an order of magnitude throughput improvement compared to slotted ALOHA in a single-cell environment under a 5% maximum outage constraint. This was joint work with Harpreet Dhillon, Harish Viswanathan and Reinaldo Valenzuela.

Tao Zhang, the Chief Scientist for Smart Connected Vehicles at Cisco Systems, provided an overview of the integration of numerous communication devices in vehicles and their associated security risks. Vehicles are equipped with a wide variety of wireless and wired communication modules including modules for control, monitoring, diagnostics, access, authentication and connection with consumer devices. Additional modules and networks are being deployed and under continuous development, such as vehicle-to-vehicle (V2V) communications, in-vehicle internet connectivity and in-vehicle WiFi hotspots. Researchers and hackers have publicized vehicle security vulnerabilities related to remote key access and vehicle diagnostics, which highlighted the need for enhanced security protection for future vehicles as they become increasingly connected. The presentation analyzed some of the security challenges and discussed possible solutions that would meet many vehicle-specific requirements. Any solution must be highly scalable to support each automaker, millions of new vehicles each year, tens of millions of vehicles in operation, tens to over a hundred devices on each vehicle, and many more spare parts. Security operations, such as the provisioning and the subsequent update and reconfiguration of on-board security systems over time should be highly automated and should not require driver intervention. Vehicle security threat detections must be performed with extremely low error rates to minimize the probability of wrongfully blaming innocent vehicles and drivers. Any security capability placed on-board vehicles must be kept up to date over the vehicles' long life-cycles without causing inconvenience to vehicle owners and in ways that does not consume excessive wireless bandwidth.

Geoffrey Smith, Vice-President of Proxim Wireless, discussed WIFI security. With increased use of the Internet by the public and corporations, attacks have become more sophisticated. Service and application providers often wonder where and how attacks can be deterred. This presentation addressed the challenges from cyber attackers for whom access through Wi-Fi seems straightforward and discussed typical prevention methods in the traditional IP world.

Krishnamurthy Raghunandan (Raghu), a Construction Administrator at the MTA/New York City Transit, gave a presentation on security in cellular systems. Cellular security is an ever changing area that originated during mid-1990s in response to wide spread fraud. This presentation provided an overview of how security is achieved using intimate interaction over the radio physical and MAC layers, and it compared and contrasted these techniques with traditional techniques used in IP networks.

Bala Prasanna, a Program Manager at IBM, gave a presentation on career management: *Manage Your Career – Don't Let it Manage You – a Few Tips to Manage Career Security*. While no one can give job security, one can strive for career security through career growth. An important component of career growth is learning and practicing soft skills, and realizing that workplace habits and expectations have changed significantly in the last few years. Surviving and thriving depends on the ability to grasp the broader picture and hone some essential skills. This presentation offered a lot of tips to be relevant and successful in today's workplace.

North Jersey Section Seeks Committee Chairs and Section Volunteers

The IEEE North Jersey Section is seeking new volunteers to help conduct business for the benefit of its membership. There are a variety of volunteer positions open and available. They range from technical to non-technical, leadership or just participatory. A list of IEEE North Jersey Societies, Chapters, Groups and Committees are published at the end of the newsletter for those interested in participating. 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 North Jersey Section, please contact Nominations Committee chair, Amit Patel at a.j.patel@ieee.org. You are welcome to attend the Section's executive committee meeting held the first Wednesday of every month to learn more about volunteer activities that require some help. Please check out the website below for published meeting times and locations. Some committees needing volunteers include the following. Please contact the person indicated for additional information.

GOLD (Graduates of the Last Decade) Affinity Group Volunteers and Committee members needed –

Contact: Sean Kennedy (sean.kennedy@alcatel-lucent.com)

WIE (Women in Engineering) Affinity Group Volunteers and Committee members needed –

Contact: Zhiwei Mao (zmao@fdu.edu)

EMBS (Engineering in Medicine and Biology Society) is seeking active committee volunteers –

Contact: raquelpc@njit.edu

Computer Society Chapter Committee Volunteers –

Contact zhao@fdu.edu-

Technical Management Council Committee Volunteers – **Contact:** almeida@synergymwave.com

North Jersey Section Awards Committee Volunteers – **Contact** k.oexle@ieee.org

Membership Development Committee Volunteers –

Contact miyer108@gmail.com

Additionally, if interested volunteers would like to get more general information about the section, including a complete listing of all chapters and committees, visit the North Jersey section website http://sites.ieee.org/northjersey or contact anyone listed above.

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

IEEE North Jersey Section Course
Model-Based DSP with FPGAs

A four session short course in October 2013
Location: *Advanced Technical Marketing (ATM), Suite 113, 1719 Rt. 10, Parsippany, NJ 07054*
Attendance limited to first 8 registrants

Topic: A course entitled 'Model-based DSP on FPGAs' will be offered by the IEEE North Jersey Chapter. This course covers the use of Altera's DSP Builder for the design of algorithms and firmware for Field Programmable Gate Arrays (FPGAs). It provides an introduction to the Mathwork's product Simulink, and to the Altera tools Quartus II and DSP Builder. Familiarity with Matlab is a prerequisite. Lab exercises will be performed using the TerAsic DE0-Nano development board and will include development of a MAC, FFT, DDC and NCO. After completing the class attendees will be able to (1) develop complete FPGA designs for stand-alone operation on target platforms, (2) produce VHDL sub-modules for integration into larger FPGA designs, and (3) perform Hardware in the Loop (HIL) cosimulation. Attendees will be credited with 1.2 Continuing Education Units (CEU) from IEEE.

The term Model-Based Design (MBD) refers to a design process involving models developed not only for the purpose of dynamic simulation, but also for generation of executable code. The model therefore includes both the algorithm being developed, and a dynamic model governing the behavior of the system in which it is contained. That part of the model surrounding the algorithm acts as a test bench -- providing stimulus and reacting to outputs.

Schedule:

Session	Topic	Dates	Times
1	Intro to Model-based design Simulink	Mon 10/7	6 - 9 PM
2	Intro to Altera Quartus II Standard Blockset Overview & Labs	Mon 10/14	6 - 9 PM
3	Standard Blockset Labs Advanced Blockset Overview	Mon 10/21	6 - 9 PM
4	Advanced Blockset Labs	Mon 10/28	6 - 9 PM

Requirements: Students are required to provide their own laptop running Windows XP or 7, with the 64-bit or 32-bit versions of Matlab and Simulink installed. Acceptable versions include 2010a, 2010b, 2011a, 2011b, and 2012a. Also, Simulink Fixed Point is required to use the Advanced Blockset, and the Communications Blockset is used on some Simulink examples. Trial licenses may be available from the Mathworks.

Instructor: David Haessig is the manager of Waveform Products at BAE Systems, Wayne NJ. His group is engaged in development of military wireless communication, control, and avionics systems. Dr. Haessig holds degrees in Mechanical Engineering from Lehigh University and in Electrical Engineering from New Jersey Institute of Technology. He is a senior member of IEEE and an Adjunct Professor at NJIT where he has taught courses in controls and mechatronics. He holds 4 patents in the area of inertial stabilization and has 24 technical and professional publications.

Cost: Unemployed IEEE Members $112.50; IEEE Members $225; Non-IEEE members $275
Contact: David Haessig, (davidhaessig@ieee.org)

Registration Deadline: October 1st, 2013, E-Register: to register online click here or go to
https://meetings.vtools.ieee.org/meeting_view/list_meeting/15077 Registration limited to first 8 students.

Alternatively, mail the completed registration with a check **(payable to "North Jersey Section IEEE") to:** Dr. Kalyan Mondal, Fairleigh Dickinson University, School of Computer Sciences and Engr, 1000 River Road, T-MU1-01, Teaneck, NJ, 07666

Name: _____ Email address _____

___Non-member ___IEEE Member Member #:_____Member of _____ technical society

Employer / Address:_____

Home Address:_____

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

Please enclose required fee payable to: **North Jersey Section IEEE.**

THE INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS, INC.

NORTH JERSEY SECTION

MTT-Society & AP-Society Joint Chapter PRESENTS

28th Annual Symposium and Mini-Show

THURSDAY OCTOBER 3, 2013

PLACE: Hanover Manor, 16 Eagle Rock Ave., E. Hanover, NJ 07936. 973-992-7425

For Registration: *https://meetings.vtools.ieee.org/meeting_view/list_meeting/18843*

MINI SHOW FEATURING LATEST PRODUCTS - (9:30 AM TO 4:30 PM)

TECHNICAL SESSIONS (8:50AM to 4:40PM)

Time	Topic	Speakers	Title	Affiliation
8:50	Opening Remarks	George Kannell	Tech. Chair IEEE MTT/AP NJ	LGS Bell Labs
9:00-10:00	Implantable Wireless Medical Devices and Systems	Dr. J.C Chiao	Greene Endowed Professor & Garrett Endowed Professor of Electrical Engineering	University of Texas - Arlington
10:00	Break – Mini Show Exhibition			
10:30-11:30	What's new in Digital Predistortion	Dr. John Wood	Editor-In-Chief	IEEE Microwave Magazine
11:30-12:15	The state-of-the-art Metamaterial Mobius Resonator Oscillator Applications in Modern Communication Systems	Dr. Ulrich Rohde	Chairman of Synergy Microwave Corp., Professor at Cottbus Univ., and Technical University Munich, Germany	Synergy Microwave Corporation
		Dr. Ajay Poddar	Chief Scientist, Synergy Microwave Corp., Visiting Lecturer at TUM, Germany	
12:15	Lunch – Mini Show Exhibition			
1:15-2:00	A Review of Gain Transistors and MMICs For Very High Power Applications	Raymond Pengelly	Strategic Bisiness Development Manager	Cree RF Business Unit
2:00	Break– Mini Show Exhibition			
2:30-3:30	Microwave Photonics	Dr. Jianping Yao	PEng, FIEEE, FOSA, FCAE Professor and University Research Chair, School of Electrical Engineering and Computer Science	University of Ottawa
3:30-4:30	Demonstrating the Future of Electromagnetics Antenna Propagation	Prof. Michael Underhill	CEO of Underhill Research Lt. Formerly at University of Surrey	Underhill Research Limited
4:30	Closing Remarks	Kirit Dixit	Chair IEEE MTT/AP NJ	Microcom Sales

Registration is on-site. Details are in the October issue of the NORTH JERSEY IEEE NEWSLETTER and Section Home page **http://www.ieee.org/go/njsection** calendar.

ALL ARE WELCOME (IEEE Membership not required). REGISTRATION IS ON-SITE

THERE IS NO CHARGE TO ATTEND THE SYMPOSIUM OR SHOW.

COMPLEMENTARY BREAKFAST / LUNCH INCLUDED FOR ALL.

FOR FURTHER INFORMATION

Chair / Exhibition:	Kirit Dixit	201-669-7599	kdixit@microcomsales.com
Chair MTT/APS Symposium	Har Dayal	973-633-4618	dayalhar@gmail.com
Technical Program Chair:	George Kannell	973-437-9990	gkk@lgsinnovations.com
Publicity:	Arthur Greenberg		a.h.greenberg@ieee.org
Event / Location Coordinator:	Ken Oexle	973-386-1156	
MTT/AP Chapter Chair	Dr. Ajay Poddar	201-560-3806	akpoddar@synergymwave.com
MTT/AP Chapter Vice Chair	Professor. Edip Niver	973-596-3542	edip.niver@njit.edu
Event Coordinator:	Russell Pepe	201-960-6796	rpepe@att.net

Special thanks to Dru Reynolds of Reynolds, Recruiters & NJ Coast Section for her invaluable assistance.

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

IEEE North Jersey Section Course

C# .NET Programming

Saturday, October 5, 2013 through November 16, 2013

Seven weekly classes (October 5, 12, 19, 26, November 2, 9, 16, 2013)
New Jersey Institute of Technology, Newark, New Jersey (Checks should not be mailed to this address)

IEEE North Jersey Section thanks New Jersey Institute of Technology, for sponsoring this course.

The IEEE North Jersey Section is offering a course entitled "C# .NET Programming". Since 2004, C# .NET has generated significant headway in Fortune 1000 enterprise development systems. Dice.com lists 1000+ C# .NET jobs (up from 720 last year) in the New York tri-state area daily! This course will cover the fundamentals of C# language, the .NET framework, window and web-based applications, ADO.NET, ASP.NET, and XML. It will be useful for anyone to develop applications based upon these tools.

You will receive the IEEE Certificate of Completion when you finish the course. Microsoft Corp. has MCAD and MCSD certifications. You may wish to get certified by taking the necessary Microsoft exams with the knowledge gained from this course.

Past attendees got jobs at AT&T, Goldman Sachs, IBM, Microsoft, Verizon, and other Fortune 500 firms.

Instructor: Donald Hsu, PhD., has been a corporate manager for 11 years and is an experienced trainer. Since 2006, he has trained 700+ people in C++, Java, Oracle, and WebLogic, XML, and C #.NET in 8 different organizations.

TOPICS

- Compare the enterprise development tools using Java to C# .NET
- Define Visual Studio .NET Version 2008 to latest
- Identify C# syntax, data type, control structures and common language runtime
- Distinguish methods, arrays, object-oriented programming
- Build graphical user interface, multithreading, files and streams
- Explain the benefit of using extensible markup language (XML)
- Select database, SQL server, and ADO .NET
- Choose ASP .NET, web forms, web services, advanced topics
- Present student Projects

WHERE:	New Jersey Institute Technology, Newark, New Jersey
WHEN:	Saturdays, October 5, 12, 19, 26, November 2, 9, 16, 2013, 9:00 AM to 12:00 noon
COST:	IEEE members $500; Non-IEEE members $550.
Contact:	Donald Hsu, yanyou@hotmail.com

REGISTRATION: C# .NET Programming

Please mail the completed registration with a check **(payable to "North Jersey Section IEEE") to:**
Donald Hsu, PhD, Chair Education Committee, IEEE North Jersey Section, P.O. Box 2093, Fort Lee, New Jersey 07024.

Name: _____ Email address _____

□ Non-member

□ IEEE Member Member #:_____

Employer: _____

Employer Address: _____

_____

Home Address: _____

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

Please enclose required fee payable to: **North Jersey Section IEEE**

□ I wish to receive IEEE Completion Certificate Signature: _____

IEEE North Jersey Section Course

Project Management

Saturdays, October 5 through November 16, 2013

Seven weekly classes (October 5, 12, 19, 26, November 2, 9, 16, 2013)

New Jersey Institute of Technology (Checks should not be mailed to this address)

IEEE North Jersey Section thanks New Jersey Institute Technology for sponsoring this course

The North Jersey Section IEEE is offering a course entitled "Project Management". Dice.com lists *5000+* Project related jobs in the New York tri-state area daily! This course will help you to break down a master project into manageable tasks, pinpoint possible solutions, and provide information to keep the project under control. Using *Microsoft Project 2010* software, you will learn to accomplish various project plans. In addition, it will greatly enhance your business, communications and interpersonal skills.

You will receive the IEEE Certificate of Achievement and earn 2 IEEE Continuing Education Units (CEUs) when you complete the course. You may wish to take the Certification exam in *Project Management* administered by Project Management Institute from the knowledge that you learned in this course. This is *not an exclusive PMP-PMI examination prep course.* No PDUs are issued for PMP eligibility. However, past attendees did successfully get the PMP certifications!

Instructor: Marilyn Moux, PMP, ITILv3, Cloud Essentials, CAP and Security+., has been a corporate manager for 20+ years and an IT security professional with experience within the entire Software Development Life Cycle Project Management.

TOPICS

- *Explain the need for a project manager*
- *Define SOW, PERT, GANTT, CPM, and Scope of the project*
- *Identify the team members, resources and plan for the strategy*
- *Calculate schedule, budget variances, and monitor project progress*
- *Manage changes, estimates, and communications*
- *Set a baseline, import tasks from MS Excel, export MS Project files to MS Word*
- *Approve updates and conclude a project plan*
- *Analyze Cloud Computing, Service Level Agreements, IT Security*
- *Present student Projects*

WHERE:	New Jersey Institute Technology, Newark, New Jersey
WHEN:	7 Saturdays, October 5, 12, 19, 26, November 2, 9, 16, 2013, 9:00 am to 12:00 noon
COST:	IEEE (& affiliate) members $500; Non-IEEE members $550.
CONTACT:	Donald Hsu, yanyou@hotmail.com,

REGISTRATION: Project Management

Please mail the completed registration form with a check **(Checks payable to "North Jersey Section IEEE") to**

Dr. Donald Hsu, Chair Education Committee, IEEE North Jersey Section, P. O. Box 2093, Fort Lee, New Jersey 07024.

Name: _____ Email address _____

□ Non-member

□ 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**

□ I wish to receive the IEEE Completion Certificate Signature: _____

IEEE North Jersey Section Membership Development, PACE, WIE, and GOLD Professional Development Seminar Series

The Art of "Speechcraft" Returns to Murray Hill

8 Weeks

Fridays, October 4 through November 22, 2013

Eight weekly classes (October 4, 11, 18, 25, November 1, 8, 15, 22, 2013)

Bell Laboratories, Alcatel-Lucent Room: 6A-106, 600 Mountain Ave, Murray Hill, NJ 07974

Led by: Brian Cort, ACS*, ALB*; Susanne Arney, ACB*, ALB*, Rebecca George, ACB*, ALB*; Holly Anderson, CC*, CL*; Host: Mani Iyer, ACB*

Abstract: Are you nervous about an upcoming presentation? Want to increase your confidence in communication? The Toastmasters clubs of Murray Hill are once again offering our popular seminar series on the art of Speechcraft. In this 8-week seminar series, you will learn techniques to improve your ability to deliver both written and impromptu speeches through live practice with Toastmasters advisors committed to helping you succeed as a speaker and develop your confidence. Techniques like speech organization, body language, and vocal variety will help you enhance your personal presence.

The seminar series will be held on Fridays beginning at 12 Noon from October 4th to November 22nd. A nominal fee of $10 to cover the cost of materials is required (yes, only $10 for all 8 sessions!). Space is very limited (~10). Registration and acceptance is required.

The Toastmasters Clubs of Murray Hill: Cosmopolitan Toastmasters and the Murray Hill Speakers Club have been helping employees as well as members of the community polish their speaking and leadership abilities for over half a century!

Cosmopolitan Toastmasters meets the 2nd and 4th Tuesdays of each month from 12pm – 1pm

Murray Hill Speakers Club meets on odd (first, third and fifth, if any) Thursdays from 12:10p m to 1:10 pm while on even (second and fourth) Thursdays, the club meets from 5:30 pm to 6:30 pm.

All guests are welcome to both clubs. Please check the club websites for contact information.

Biographies:

Brian Cort, ACS, ALB is the VP-Membership of the Murray Hill Speakers Club, current President of Northern Stars Advanced Toastmasters Club, and Past President of both the Murray Hill Speakers Club and Cosmopolitan Toastmasters; He served as Toastmasters Area 32 Governor for 2011 to 2012. He is a Distinguished Member of Technical Staff at Alcatel-Lucent, and currently works on 4G Wireless technology.

Susanne Arney, ACS, ALB is the President of the Murray Hill Speakers club, VP Membership of Cosmopolitan Toastmasters club, and Toastmasters Area 32 Governor; Susanne is a Bell Labs Fellow and is currently a Senior Director, Enabling Physical Technologies Research in Bell Labs, Alcatel-Lucent.

Rebecca George, ACB, ALB is the immediate past President of Cosmopolitan Toastmasters and current Treasurer of the Cosmopolitan Toastmasters. She works as a Global Human Resources Manager for the Wireless Division at Alcatel-Lucent. Rebecca has been a Toastmaster for 5 years and enjoys helping people realize that honing the skill of public speaking is a gateway to improving all of a person's communication and leadership skills, creating a platform for career growth.

Holly Anderson, CC, CL, is the current President of the Cosmopolitan Toastmasters club. She has also served the Cosmopolitan club in various officer roles. Holly is a Human Resource Business Partner supporting the Wireless organization in North America.

Mani Iyer, ACB, is a member of the Cosmopolitan Toastmasters club and is currently serving as its Vice President, Education. He has also served as the President of the Holmdel Toastmasters club. Mani is a certified IEEE Wireless Communications Professional and an Engineer in the Wireless Division at Alcatel-Lucent.

Toastmasters Educational Designations: (e.g, CC/CL Competent Communicator/Leader; ACB/ACL Advanced Communicator Bronze/Silver etc.)

Please see http://www.toastmasters.org/ to learn more about these designations.

Location: Bell Laboratories, Alcatel-Lucent Room: 6A-106, 600 Mountain Ave, Murray Hill, NJ 07974 Getting to Bell Labs

Time: 12:00PM-1:30PM (Fridays October 4 – November 22, 2013)

All are welcome! You do not have to be a member of the IEEE to attend.

You don't need to be a member of Toastmasters to participate in this program,

Seats are very limited (~10); Registration is required at this IEEE vtools link. For Registration and Updates – Click Here

Refreshments will be provided

Contact: Mani Iyer (miyer108@gmail.com); Adriaan van Wijngaarden (avw@ieee.org).

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