



The IEEE

# Newsletter

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

## Professional Skills Development Workshop Call for Participants

This notice is to inform all interested students of the upcoming Professional Skills Development Workshop. This annual workshop will be held on Saturday, November 6th, 1999 at Stevens Institute of Technology in Hoboken, NJ.

If you don't already know, this workshop is to provide students an opportunity to get professional skills education that is not available in an academic environment. Comparable to last year's workshop, the agenda will include topics emphasizing softer skills that engineers need to succeed in today's working world. Previous topics included career planning and management, overcoming fears, and public communication skills.

The Fall 99 program will include new professional topics and new speakers. The focus will be on critical topics such as time management, practical engineering experience, presentation skills, and others. Remember, this workshop is open to all interested engineering students that want to learn such professional skills and have an edge before they go to work.

So what do you have to do? **PRE-REGISTER!** Attendance to the event is completely free. You must pre-register to reserve a seat at the event, to reserve a copy of the workshop proceedings (this booklet is free for IEEE Student members, \$2/copy for non-IEEE members) and to reserve a seat for a free lunch.

As more information becomes available and more topics are added (speakers, agenda, location, directions) will be publicized in the newsletters and electronically. The latest news is available at the North Jersey Section Student Activities website at <http://menger.eecs.stevens-tech.edu/~apatel3/ieee.html> or contact Amit Patel at [a.j.patel@ieee.org](mailto:a.j.patel@ieee.org), (973) 284-2708 for questions or to be put on the Student Activities Mailing List.

## NJ Computer Chapter: Internet Routing Fundamentals

On September 15th, 1999, the IEEE North Jersey Section Computer Chapter will host a presentation on Internet Routing Fundamentals by Professor Frank Relotto.

### About the Talk

Internet routing fundamentals will be covered during a discussion first of the two more popular protocols used by Local Area Networks: Novell's IPX/SPX, and TCP/IP. Then the Network Layer of the OSI Protocol (layer three) will be reviewed. This will be followed by an examination of routing concepts such as TCP/IP's Address Resolution Protocol (ARP). Finally, both the Internal and the Exterior gateway protocols will be reviewed which are used to interconnect two or more subnetworks that use different protocols above the OSI Network Layer.

The talk will conclude with a question and answer session.

### About the Speaker

Professor Relotto has been with DeVry for 20 years and is a Senior Professor in the Telecommunications Management Curriculum. His specialties include both Network Operating Systems as well as Local and Wide Area Networks.

Professor Relotto, a Senior Member of the IEEE, is a past Chairman of the North Jersey Section and has held a number of high level positions on the Metropolitan Sections Activity Council (METSAC) including Electro Director. In 1984, he received the IEEE Centennial Medal for his dedicated volunteer services within the North Jersey Section and METSAC.

### All Welcome!

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

**Time:** 7:00 PM, Wednesday, September 15th, 1999.

**Place:** DeVry Institute, 630 US Highway One North, North Brunswick, NJ. From Route 287, go South on Rt. 1 about 6 miles to Bristol-Myers Squibb. Turn right immediately after Bristol-Myers and continue bearing right under Rt. 1 onto service road. Entrance to DeVry will be on your left. For map refer to: <http://www.nj.devry.edu/misc/campusinfo.htm>.

**Information and Pre-meeting Dinner Reservations:** Howard Leach, (973) 540-1283, or [h.leach@ieee.org](mailto:h.leach@ieee.org).

## The October Newsletter Will Be All Electronic!

For the 3<sup>rd</sup> year in a row, the October issue of The IEEE Newsletter will be all electronic and will not be mailed. All members can find the latest meeting and activity announcements by clicking "Newsletters" on the IEEE North Jersey Section Home Page at:

<http://www-ec.njit.edu/~ieeenj/>

## September 1999 Volume 46, Number 3

Publication No: USPS 580-500

"The IEEE Newsletter" (North Jersey Section), is published monthly except July and October by The Institute of Electrical and Electronics Engineers, Inc. Headquarters: 3 Park Avenue, 17th Floor, New York, NY 10016-5997. \$1.00 per member per year (included in annual dues) for each member of the North Jersey Section. Periodicals-class postage paid at New York, NY and at additional mailing offices. Postmaster send address changes to: "The IEEE Newsletter", 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331. USPS 580-500 (ISSN 1076-3732).

### NEWSLETTER STAFF

Editor .....Keith Saracinello  
Business Manager .....Theresa Saracinello

**Deadline for receipt of material** is the 1st of the month preceding the month of publication. All communications concerning editorial and business matters, including advertising, should be sent to the Business Manager via e-mail at [k.saracinello@ieee.org](mailto:k.saracinello@ieee.org) or to *The IEEE Newsletter*, c/o Keith Saracinello, 25 Messenger Ln, Ringoes, NJ 08551, (732) 562-6472.

### IEEE NJ SECTION HOME PAGE

<http://www-ec.njit.edu/~ieeenj/>

### IEEE NJ SECTION NEWSLETTER HOME PAGE

<http://www-ec.njit.edu/~ieeenj/NEWSLETTER.html>

### REPORT ADDRESS CHANGES TO:

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

### SECTION OFFICERS

Chairman ..... Dr. Fred Chichester  
(973) 744-3065  
Vice-Chairman-1 .....Dr. Chandra Gupta  
[gupta@systems.gec.com](mailto:gupta@systems.gec.com), (973) 633-4469  
Vice-Chairman-2 .....Alan Stolpen  
[a.stolpen@ieee.org](mailto:a.stolpen@ieee.org), (973) 822-1300, ext. 2416  
Treasurer ..... Rodney Cole  
[rod-tonya-cole@worldnet.att.net](mailto:rod-tonya-cole@worldnet.att.net)  
(973) 299-9022 Ext. 2257  
Secretary ..... Milton Korn  
[miltonkorn@aol.com](mailto:miltonkorn@aol.com) (973) 365-2757

Members-at-Large:  
Naz Simonelli  
Richard Tax

*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 Milton Korn (973) 365-2757, [miltonkorn@aol.com](mailto:miltonkorn@aol.com).*

## HP VoIP/FoIP Testing Seminar

On September 16, 1999, Hewlett Packard will host a free Voice Over IP / Fax Over IP Seminar.

### About the Talk

This talk on Voice Over IP / Fax Over IP will be Internet Advisor / FaxTrace Protocol Analyzer focused. A test/troubleshooting tool such as the Internet Advisor or Telegra FaxTrace is critical in today's high speed networks which incorporate data, voice, and fax traffic. First, this seminar will give a primer on Voice Over IP / Fax Over IP networks followed by a demonstration of the VoIP decode capabilities on the Internet Advisor and the FoIP decode capabilities with Telegra FaxTrace Software.

### Registration Required!

To register, Contact Pam Weber at [pam\\_weber@hp.com](mailto:pam_weber@hp.com) or (630) 245-3180. Clearly state you would like to register for the Paramus Seminar and you were invited via IEEE.

**Time:** 8:30 AM - 12:00 PM, Thursday, September 16, 1999.

**Place:** Hewlett Packard, West 120 Century Road, Paramus, NJ. See <http://www.hp.com/education/edu-centers/tranewpar.html> for directions.

**Information:** Mike Young at [mike\\_m\\_young@hp.com](mailto:mike_m_young@hp.com) or (719) 531-4470.

## HP Security Software Seminar

On September 16, 1999, Hewlett Packard will host a free Security Software Seminar.

### About the Talk

Learn about risk assessment, attack simulation, intrusion detection, and security management tools that will enable system administrators to stay ahead of hackers (both internal and external) in the race to defend valuable network resources and critical data. A good risk-assessment tool needs to assess well beyond the operating system. It must also assess the applications that store and manage information. In this seminar you will learn techniques recommended by the System Administration, Networking, and Security (SANS) Institute for protecting your information systems from loss and theft. Learn how to close and lock all the windows and doors on your system instantly without interrupting service to your users, and how to provide comprehensive and ongoing protection for your servers.

### Registration Required!

To register, Contact Pam Weber at [pam\\_weber@hp.com](mailto:pam_weber@hp.com) or (630) 245-3180. Clearly state you would like to register for the Paramus Seminar and you were invited via IEEE.

**Time:** 1:00 PM - 3:00 PM, Thursday, September 16, 1999.

**Place:** Hewlett Packard, West 120 Century Road, Paramus, NJ. See <http://www.hp.com/education/edu-centers/tranewpar.html> for directions.

**Information:** Mike Young at [mike\\_m\\_young@hp.com](mailto:mike_m_young@hp.com) or (719) 531-4470.

## Need an expert?

New Product Development  
Embedded Systems  
Power Engineering  
Technical Writing  
Analog Design  
Software  
Packaging  
Digital Design  
Microprocessors  
Telecommunications  
Mechanical Engineering



Call for a **free** consultant referral:  
(973) 728-4500

**IEEE  
CONSULTANTS' NETWORK  
OF NORTHERN NJ**

[www.hicom.net/~cnnnj](http://www.hicom.net/~cnnnj)

## *NJ Consultants' Network:* **Formal Methods - Software's Ounce of Prevention and Ray of Hope**

On Thursday September 30th, 1999, the IEEE Northern NJ Consultants Network will host a presentation by Dr. George Hacken on "Formal Methods - Software's Ounce of Prevention and Ray of Hope."

### **About the Talk**

The \$64M (and up) question regarding (a piece of) software, and indeed a whole software/firmware/hardware system, is:

- ⌘ Will it work?
- ⌘ Is it correct?
- ⌘ Did we make the product according to specification? (verification)
- ⌘ Did we make the right product? (validation)

The above price tag on software development is, today, quite credible. A recent unsuccessful rocket launch cost \$500M, eight times as much as was estimated.

The Speaker will give an overview of Formal Methods and their role in software and system design and development. Formal Methods of software creation and correctness-verification are means of building-in and providing correctness prior to the software's implementation and execution. As a philosophy, this is the "inverse" of debugging and of testing, and has so far been the missing link.

### **About the Speaker**

George Hacken, PhD is President of Altman Research Corporation, a company that specializes in Real-Time Embedded Systems and Software.

George has an AB (Physics/Math) and PhD in Physics from Columbia, where he did research in Nuclear Physics. He has subsequently worked in factory automation, financial software, and aerospace.

### **All Welcome!**

You do not have to be a member of the IEEE or the Consultants Network to attend. Networking after the meeting is encouraged.

**Time:** 7:30 PM, Thursday, September 30, 1999.

**Place:** KDI Triangle, 60 S. Jefferson Road, Whippany, NJ.

**Information:** Please call (973) 728-4500 for meeting site directions and information on the IEEE Consultants Network, or visit our Web Site at [www.hicom.net/~cnnnj/](http://www.hicom.net/~cnnnj/).

## **North Jersey Section Activities September 1999**

**Sept. 1**—"NJ Section Executive Committee Meeting" – 7:00 PM, ITT, 100 Kingsland Road, Clifton, NJ. Milton Korn (973) 365-2757 or [miltonkorn@aol.com](mailto:miltonkorn@aol.com).

**Sept. 10** - Deadline for Third Millennium Medal Nominations. Ken Oexle (973) 386-1156.

**Sept. 15**—"Internet Routing Fundamentals" - NJ Computer Chapter, 7:00 PM, DeVry Institute, 630 US Highway One North, North Brunswick, NJ. Howard Leach at [h.leach@ieee.org](mailto:h.leach@ieee.org) or (973) 540-1283.

**Sept. 16**—"Application of Microturbines" – NJ IAS/PES Chapters, 7:00 PM, PSE&G Training Center, Route 1, Edison, NJ. Tom Piascik (973) 430-6692 or Ken Oexle (973) 386-1156.

**Sept. 16**—"Voice Over IP / Fax Over IP Seminar" - 8:30 AM, Hewlett Packard, West 120 Century Road, Paramus, NJ. Reservations required. Mike Young at [mike\\_m\\_young@hp.com](mailto:mike_m_young@hp.com) or (719) 531-4470.

**Sept. 16**—"Security Software Seminar" - 1:00 PM, Hewlett Packard, West 120 Century Road, Paramus, NJ. Reservations required. Mike Young at [mike\\_m\\_young@hp.com](mailto:mike_m_young@hp.com) or (719) 531-4470.

**Sept. 21 - Oct. 21**—"Internet Programming/Web Application Development" – North Jersey Section, Tuesday and Thursday Evenings, 10 sessions, 6:30-9:00 PM, GEC Marconi, 150 Parish Drive, Wayne, NJ. Bhanu Chivakula, (973) 751-4879 or Gabe Silberman, (732) 463-6824, [silberman@ieee.org](mailto:silberman@ieee.org).

**Sept. 22**—"Recent Advances in Printed Antennas for Wireless and Satellite Communications" – MTT/S/AP-S Chapter, 7:00 PM, NJIT, Room 202, ECE Building, Newark, NJ. Dr. Chandra Gupta (973) 633-4469 (GEC-Marconi), Dr. Edip Niver (973) 596-3542 (NJIT), or Willie Schmidt (973) 492-0371.

**Sept. 29 - Dec. 8**—"Object Oriented C++ Programming" – North Jersey Section, Wednesday Evenings, 10 sessions, 6:30-9:00 PM, GEC-Marconi, 164 Totowa Road, Wayne, NJ. Bhanu Chivakula, (973) 751-4879 or Gabe Silberman, (732) 463-6824, [silberman@ieee.org](mailto:silberman@ieee.org).

**Sept. 30**—"Formal Methods - Software's Ounce of Prevention and Ray of Hope" - NJ Consultants' Network, 7:30 PM, KDI Triangle, 60 S. Jefferson Road, Whippany, NJ. (973) 728-4500.

**Sept. 30**—"Has Nuclear Fallout Ever Stopped?"— NY/NJ/LI EMBS, 7:15 PM Registration, 7:30 PM Lecture, Rockefeller University, Weiss Building, Room 301, 1200 York Ave, NY, NY. Joel H. Levitt (212) 479-7805 (24 hr voice mail).

**Sept. 30**—"WINLAB's 10<sup>th</sup> and Marconi's 100<sup>th</sup> Anniversary Celebration" – Various Events, Times and Locations. Melissa Gelfman at [gelfman@winlab.rutgers.edu](mailto:gelfman@winlab.rutgers.edu) or (732) 445-0283.

### **Upcoming Meetings**

**Oct. 2**—"Student Leadership Training Workshop" - Time and Building TBA, NJIT, Newark, NJ. Amit Patel at [a.j.patel@ieee.org](mailto:a.j.patel@ieee.org) or (973) 284-2708.

**Oct. 6**—"NJ Section Executive Committee Meeting" – 7:00 PM, ITT, 100 Kingsland Road, Clifton, NJ. Milton Korn (973) 365-2757 or [miltonkorn@aol.com](mailto:miltonkorn@aol.com).

**Oct. 6**—"Quantum Computation with Mesoscopic Josephson Junctions" – EDS/C&S, MTT/AP and Computer Chapters, 7:00 PM, NJIT, Room 202, ECE Building, Newark, NJ. Dr. Richard Snyder (973) 492-1207 (RS Microwave), Dr. Durga Misra or Dr. Edip Niver (973) 596-3542 (NJIT), Dr. Chandra Gupta (973) 633-4469 (GEC-Marconi), Howard Leach (973) 540-1283.

**Nov. 6**—"Professional Skills Development Workshop" - Time and Building TBA, Stevens Institute of Technology, Hoboken, NJ. Pre-registration required. Amit Patel at [a.j.patel@ieee.org](mailto:a.j.patel@ieee.org) or (973) 284-2708.

**Members and Non-Members Welcome**  
**PLEASE POST**

*NJ MTT/AP Chapter:*

## **Recent Advances in Printed Antennas for Wireless and Satellite Communications**

The topic at the September 22nd, 1999 meeting of the MTT/S/AP-S Chapter will be "Recent Advances in Printed Antennas for Wireless and Satellite Communications." The speaker will be Dr. Raine N. Simons.

### **About the Talk**

The talk commences with a brief overview of printed antenna concepts. The overview will include basic types of printed radiators, such as, microstrip patch, strip, and slot antennas. Second, feeding techniques, such as, direct feed, proximity feed and aperture coupled feed will be discussed. Examples of feed systems using microstrip, slotline or coplanar waveguide will be presented. Third, techniques to realize dual polarization and circular polarization will be presented.

As examples of printed antennas, the design and experimental characterization of a S-band (2.3 GHz) seven patch hexagonal circularly polarized (CP) subarray with a CPW/stripline feed network and a K-band (19 GHz) sixteen element linearly tapered slot antenna array with radial microstrip/slotline feed will be presented.

At millimeter-wave frequencies the efficiency of conventional printed circuit antennas greatly reduce due to conductor losses in the feed network. Hence in this talk, the advantages of quasi-planar transmission media, such as suspended substrate stripline, will be presented. This will be followed by the experimental characteristics obtained for a V-band (50 to 75 GHz) cavity-backed circular aperture antenna with suspended substrate stripline probe feed.

### **About the Speaker**

Raine N. Simons received a PhD degree in Electrical Engineering from the Indian Institute of Technology, New Delhi, India, in 1983. Since 1985 he has been with the Communications Technology Division, NASA Glenn Research Center, Cleveland, Ohio. His work at NASA has focused on optical control of MESFET and HEMT devices, high-temperature superconductivity, modeling of coplanar waveguide (CPW) and coplanar stripline (CPS) circuits, design of feed systems for printed antennas, packaging for MMIC's and micro-electro-mechanical systems (MEMS) based antennas. He is the author of several books and technical papers. Dr. Simons is an Editorial Board member of IEEE Transactions on Microwave Theory and Techniques. Dr.

Simons is a Senior member of the IEEE.

### **All Welcome!**

You do not have to be an IEEE member to attend. Free pre-meeting buffet for attendees will be served at 6:15 PM.

**Time:** 7:00 PM, Wednesday, September 22, 1999.

**Place:** NJIT, Room 202, ECE Building, Newark, NJ. Directions are available at [www.njit.edu](http://www.njit.edu).

**Reservations/Information:** Dr. Chandra Gupta (973) 633-4469 (GEC-Marconi), Dr. Edip Niver (973) 596-3542 (NJIT), or Willie Schmidt (973) 492-0371.

*NJ EDS, C&S, MTT/AP, and Computer Chapters:*

## **Quantum Computation with Mesoscopic Josephson Junctions**

The IEEE NJ Section Electron Devices, Circuits and Systems, MTT/S/AP-S, and Computer Chapters along with NJIT will host a talk October 6, 1999 on "Quantum Computation with Mesoscopic Josephson Junctions." The speaker will be Professor Dmitri V. Averin.

### **About the Talk**

It has been shown recently that quantum mechanics can make computers fundamentally more powerful by exploiting new feature of quantum parallelism. Intense theoretical and experimental effort is devoted presently to finding the optimum approach to experimental realization of quantum computation. Impressive progress was achieved in this direction in nuclear magnetic resonance (NMR) systems, where small-scale prototypes of many quantum algorithms have been demonstrated. Despite this progress, it seems to be practically impossible to scale the NMR systems up from their present level of a few (2-5) qubits. This stimulates interest to possible solid-state implementations of quantum logic gates which in principle should be scalable to structures of thousands or more gates. In the presentation a brief introduction to quantum computation will be given along with a discussion of one of the most promising solid-state approaches to experimental quantum computation based on mesoscopic Josephson junctions.

### **About the Speaker**

Dmitri V. Averin attended the Moscow State University, USSR, where in 1984 he graduated with honors and in 1987 was named Candidate of Sciences in Physics and Mathematics (corresponds to PhD). He has held positions as Junior Scientist

at the Moscow Institute of Aviation Technology, Scientist in the Department of Physics at Moscow State University, Visiting Professor at NTT Basic Research Laboratories, and is currently Associate Professor in the Department of Physics at the State University of New York at Stony Brook. His research interests include: Coulomb blockade effects in mesoscopic conductors, mesoscopic superconductivity, and quantum computation.

### **All Welcome!**

You do not have to be an IEEE member to attend.

**Time:** 7:00 PM, Wednesday, October 6, 1999. Free buffet will be starting at 6:15 PM.

**Place:** NJIT, Room 202, ECE Building, Newark, NJ. Directions are available at [www.njit.edu](http://www.njit.edu).

**Information:** Dr. Richard Snyder (973) 492-1207 (RS Microwave), Dr. Durga Misra or Dr. Edip Niver (973) 596-3542 (NJIT), Dr. Chandra Gupta (973) 633-4469 (GEC-Marconi), Howard Leach (973) 540-1283.

## **Student Leadership Training Workshop for Fall 1999.**

Attention all returning students! Ready to kick-start your student branches? Were you elected as a student branch officer and don't know what to do? Need help in running your branch? Well the student leadership workshop is for you!

This year's student leadership workshop is being held at the New Jersey Institute of Technology (NJIT) on Saturday, October 2nd, 1999. The exact details of the speaker and agenda will be announced as they become available. Additional information on this event (speaker/agenda/directions/room) can be found at the North Jersey Section Student Activities website at <http://menger.eecs.stevens-tech.edu/~apatel3/ieee.html>.

This announcement is to inform interested students of an opportunity to have their branch leaders trained in the operations and responsibilities of an IEEE student branch. What better way to start the year off on the right foot and get a head start on student activities.

All current student branch officers or new incoming officers are invited to attend along with their branch counselors. What do you have to do to attend? Just email Amit Patel at [a.j.patel@ieee.org](mailto:a.j.patel@ieee.org) or call (973) 284-2708 with contact information and number of students. Also email if you would like to be added to a student activities mailing list or have additional questions.

NY/NJ/LI EMBS:

## Has Nuclear Fallout Ever Stopped?

On September 30, 1999, the Metropolitan Chapter of the Engineering in Medicine and Biology Society of the Institute of Electrical and Electronics Engineers announce "Has Nuclear Fallout Ever Stopped?." The speaker will be Dr. Jay M Gould.

### About the Talk

The Radiation and Public Health Project Inc. has been measuring strontium-90 levels in baby teeth (the "Tooth Fairy Project") with a goal of correlating the great variation found among individual teeth (ranging from 0.2 picocuries per gram calcium to 11!) with the results of highly detailed medical histories.

Thanks to recent widespread local television and newspaper coverage in the New York metropolitan area and response to the website ([www.radiation.org](http://www.radiation.org)), they are getting baby teeth far in excess of their wildest expectations. Reflecting in part endorsements by actor Alec Baldwin and Jan Schlichtman (protagonist of "A Civil Action") they are now averaging over 30 daily requests for submission envelopes.

On September 21, 1999 there will be a public announcement of their extraordinary and surprising findings, of national as well as international significance. On September 30th, Dr. Gould will be available for us, to present results and answer questions.

### About the Speaker

Dr. Jay M Gould holds a PhD from Columbia University. He is an epidemiologist and statistician who served on the US Environmental Protection Agency Science Advisory Board (during the Carter Administration). He is the Director and Founder of the Radiation and Public Health Project. Inc.

Dr. Gould has written numerous articles and several books on the epidemiological evidence demonstrating the health effects of low level radiation. His books include:

- ♦ *Deadly Deceit*
- ♦ *The Enemy Within: The High Cost of Living Near Nuclear Reactors*
- ♦ *Nuclear Fall: Prostate Cancer and Health Effects of Nuclear Reactors (forthcoming)*

Dr. Gould was our speaker October 20, 1994 ("Low Level Radiation and Cancer").

**Time:** 7:15 PM Registration (no charge), 7:30 PM Lecture, Thursday, September 30, 1999.

**Place:** Rockefeller University, Weiss Building, Room 301, 1200 York Ave, NY, NY. Free parking available – entrance

gate at 66<sup>th</sup> St.

**Information:** Joel H. Levitt (212) 479-7805 (24 hr voice mail) for meeting details or [www.radiation.org](http://www.radiation.org) for project information.

### NJ PES/IAS:

## Application of Microturbines

On September 16, 1999 the IEEE North Jersey Power Engineering Society and Industrial Applications Society Chapters will host a presentation on "Application of Microturbines." The speaker will be Mr. Shailendra K. Suman.

### About the Talk

The talk will cover the following subjects:

- Value Propositions
- Technology Overview
- Market Dimensions
- Case Studies
- Product Status
- Demonstration Program
- Critical Success Factors

### About the Speaker

Shailendra K. Suman is the Managing Director of Microturbine Business Unit at PSEG Energy Technology, one of the most active energy services companies in the Northeast and a subsidiary of Public Services Enterprise Group. Since joining the company in 1998, he has been responsible for the development of distributed generation business product line, which includes product design, development of distribution/service channel, product marketing and internal operations. Mr. Suman has an MS in Mechanical Engineering and an MBA in Finance and Strategy. He is currently a member of Distributed Power Coalition of America, Conference Board International Council of Innovation & Technology Management, EPRI Council of Distributed Resources, and IEEE.

**Time:** 7:00 PM, Thursday, September 16, 1999.

**Place:** PSE&G's Edison Training and Development Center, Edison, NJ.

**Directions:** On Route 1 north make first sharp right after passing through the I-287 interchange. This is Pierson Avenue. Make a left into the PSE&G compound and follow the driveway to its end.

**Information:** Tom Piascik (973) 430-6692 or Ken Oexle (973) 386-1156.

## Joel Snyder for IEEE President

The North Jersey Executive Committee has endorsed Joel Snyder for IEEE President. The committee has taken this step because of Mr. Snyder's long history of IEEE activity and his value as a leader to Region 1 and the metropolitan area. In his 45 years of IEEE membership, Joel has served as a member of 35 separate committees and boards, and has been an officer of METSAC, Chairman of the Long Island Section, Director of Region 1, board member of ELECTRO and E-CON 97, USAB Vice Chair and IEEE Vice President. His contributions have been in areas of technical advancement for the profession and professional advancement for the individual engineer. Joel has performed in the areas of academia, as Professor of Computer and Electrical Engineering at Polytechnic University, and in industry as a consultant to industry and in his own company, Snyder Associates.

The IEEE needs strong leadership that represents all the members and we feel that Joel Snyder is the best of all candidates for this task. We urge all the members of the North Jersey section to vote this year and to vote for Joel Snyder.

## Do It Now! Advance to Senior Member Grade

To become a Senior Member, you need ten years of experience. A Bachelors degree counts for three years and a Masters and Doctorate each count for one year. You don't have to be an IEEE member for ten years. The dues for Senior Members, Members and Associates are the same.

To get information and an application, contact Don Weinstein, Kulite Semiconductor, One Willow Tree Road, Leonia, NJ 07605-2239, (201) 461-0900 Ext 234, mornings, or [don@kulite.com](mailto:don@kulite.com). Include your mailing address.

## *The IEEE North Jersey Section Honors Past Chairs*

Year	Chairperson	Organization
1961-2	Alanson W. Parkes	IRE
1962-3	Alanson W. Parkes	IEEE
1963-4	Charles W. Vadersen	IEEE
1964-5	John K. Redmon	IEEE
1965-6	Walter L. Glomb	IEEE
1966-7	Stephen A. Mallard	IEEE
1967-8	Bernard Meyer	IEEE
1968-9	Joseph O'Grady	IEEE
1969-70	Merle M. Irvine	IEEE
1970-1	Herbert C. Blaicher Jr.	IEEE
1971-2	Robert Sokalski	IEEE
1972-3	Carl Torell	IEEE
1973-4	Harlan J. Perlis	IEEE
1974-5	Max J. Schindler	IEEE
1975-6	Dr. Robert E. McMillan	IEEE
1976-7	Frank Gialanella	IEEE
1977-8	Norman Bleshman	IEEE
1978-9	Donald G. Bathke	IEEE
1979-80	Kenneth J. Oexle	IEEE
1980-81	Alan H. Stolpen	IEEE
1981-82	Alex T. Brown	IEEE
1982-83	Frank J. Relotto	IEEE
1983-84	Anne M. Giedlinski	IEEE
1984-85	Eugene W. Niemiec	IEEE
1985-86	Richard F. Tax	IEEE
1986	Richard F. Tax	IEEE
1987	John Van Savage	IEEE
1988	Dr. Robert R. Sinusas	IEEE
1989	Howard H. Leach, Jr.	IEEE
1990	Raymond W. Sears, Jr.	IEEE
1991	George D. Gaul	IEEE
1992	Dr. Richard Snyder	IEEE
1993	Dr. Michael I. Liechenstein	IEEE
1994	R. Vittal Rebbapragada	IEEE
1995	Thomas D. Denigris	IEEE
1996	R. Vittal Rebbapragada	IEEE
1997	Arthur H. Greenberg	IEEE
1998	Melvin A. Lewis	IEEE
1999	Dr. Frederick D. Chichester	IEEE

\*Until 1986 the term of Section Officers ran from July 1 through June 30

# Information = Money

**Find out the latest information on U.S. engineering salaries and fringe benefits...**

*Check out the **IEEE-USA Salary & Fringe Benefit Survey, 1999-2000 Edition**. It is the only real source for the timely, vital information that you must have to assess your market value as an engineer.*

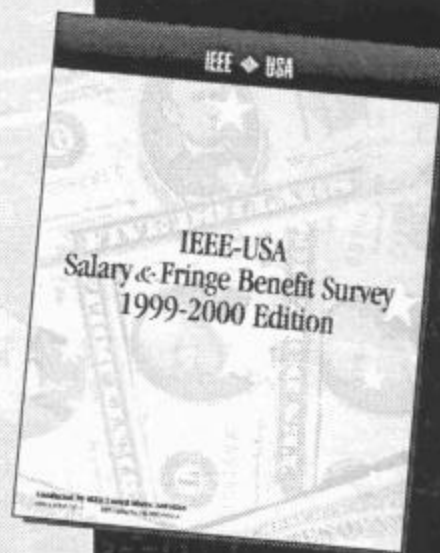
## **The Definitive Salary and Reference Guide.**

**IEEE Members:** \$74.95 member (Half-price!)  
\$149.95 nonmember

**To order:** Call 1-800-678-IEEE with your credit card information and ask for product number No. UH2981

### **MEMBERS ONLY OFFER**

Send me both the *1999 Salary Survey* and *Salary Benchmarks: A Personal Workbook* for the special IEEE Member price of \$84.95 (UH2985)



**IEEE-USA**

## **Are you getting paid what you're worth?** *(How do you know?)*

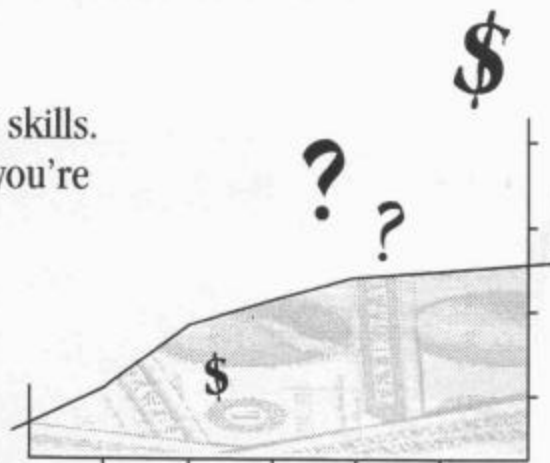
You work hard to stay current in your professional skills. We've made it easy for you to stay current in what you're paid for them.

### **Get**

### *Salary Benchmarks: a Personal Workbook*

The IEEE-USA Salary Survey's companion volume which provides a personal salary estimate that allows engineers to factor in their individual circumstances for their current or prospective future job including 75 variables such as location, experience, industry, education and other economic and demographic characteristics.

Salary Benchmarks is available from the IEEE-USA Service Center at 800-678-IEEE for \$14.95. Ask for product no. UH2982.



**IEEE-USA**

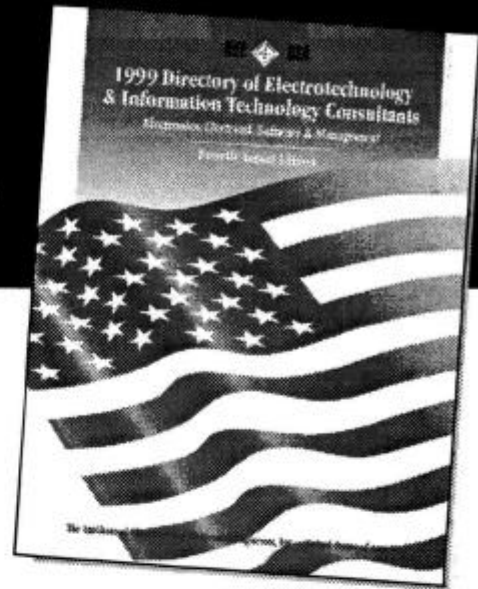


# Looking for a Technical Consultant?

IEEE-USA has published the 4th annual *National Directory of Electrotechnology and Information Technology Consultants*.

This publication includes a description of each listed consultant, cross-references of consultants by category and state, and contacts for local IEEE-USA consultants network referral systems.

Request a **free** copy from Alliance of IEEE Consultants Networks, IEEE-USA, 1828 L Street, NW, Suite 1202, Washington, DC 20036, 202-785-0017, 202-785-0835 (fax). Order No. UH2984. Contact: <[w.anderson@ieee.org](mailto:w.anderson@ieee.org)>. Check out our searchable database: <[www.ieee.org/consultants](http://www.ieee.org/consultants)>.



# Are you a Technical Consultant?

The Alliance of IEEE Consultant Networks Coordinating Committee (AICNCC) publishes a newsletter for consultants about network activities and consulting in general.

It is published three times per year and is also available on the Web at  
<[www.ieee.usa.org/BUSINESS/info.ieeeusa.consultant.newsletter.txt](http://www.ieee.usa.org/BUSINESS/info.ieeeusa.consultant.newsletter.txt)>.

To subscribe, contact William Anderson at 202-785-0017, ext.330, or <[w.anderson@ieee.org](mailto:w.anderson@ieee.org)>.





# IEEE North Jersey Section Course Object Oriented C++ Programming

Wednesday Evenings, September 29 – December 8, 1999

(Sept. 29, Oct. 6, 13, 20, 27, Nov. 3, 10, 17, Dec. 1 and 7 - No class Nov. 24 on account of Thanksgiving on 25th)

GEC-Marconi, 164 Totowa Road, Wayne, NJ

(Checks should not be mailed to this address)

The North Jersey Section IEEE is offering an evening course entitled "Object-Oriented C++ Programming." The Object-Oriented concept is very widely used today in new design and programming work. Instead of focusing on functionality (what the programs do) it focuses on the natural objects comprising the problem and how they, and their capabilities, are modeled in the program.

C++ is the most widely used language today for object-oriented design and programming. But O-O programming is still programming, so the course will begin with the elements of procedural programs and using C++ as a better C language. It will then move on to Object-oriented programming. The course will cover concepts, implementation and practical aspects of using C++ code.

A knowledge of C programming is not necessary to take the course, but, because neither C nor C++ are elementary programming languages, a familiarity with foundation programming concepts will be very helpful.

## TOPICS

1. Review common elements of C and C++: punctuation and key words, variable naming, typing and scope, libraries, text strings, arrays, structures and pointers.
2. C++ procedural programs: conditionals and logical variables, looping and testing, subfunctions and arguments. Debugging.
3. Concept of Object-Orientation: objects and classes of objects, methods and messages, encapsulation and abstraction, overloading of functions and operators, inheritance and polymorphism.
4. C++ improvements to C: new commands and operators, comments, stream I/O. function prototypes, more explicit typing and linking.
5. C++ implementation of objects: what is a C++ object, data and method functions within an object, public, private and friend, static and dynamic objects, constructors and destructors.
6. Encapsulation and abstraction within C++ objects: references and aliases, scope control operator, 'this' object, overloading, functions, operators.
7. Inheritance and polymorphism among C++ objects: parent class or object, extending classes, redefining object data and methods, multiple inheritance.
8. C++ I/O streams: standard I/O, formatted I/O with manipulators, disk and device I/O.
9. C++ library classes and their use: characteristics of a good library class, conversion base classes, video base classes, window base classes, database base classes.
10. Overall program structure with C++ objects: how to lay out a C++ program, how to reuse classes in a program, how to test and evolve a C++ program, how to find errors and debug C++ object programs.
11. Other topics: object-oriented design methodologies, templates and the standard template library, namespaces and interactive program design. Object programs in the Windows environment. Evolution of C++. Commonality and differences with Java.

Class size will be limited to a maximum of 25 with a minimum of 15. Early registration is recommended. Phone reservations will NOT be accepted. Reservations accepted after Sept. 10 will require a late fee of \$25. No reservations will be accepted after Sept. 17<sup>th</sup>.

**WHERE:** GEC-Marconi, 164 Totowa Road, Wayne, NJ. (Checks **should not** be mailed to this address)

**WHEN:** 10 Sessions, Wednesdays, September 29 through December 8, 1999, 6:30-9:00 PM.

**COST:** With text book only: IEEE members \$285; Non-IEEE members \$395.



**CONTACT:** Bhanu Chivakula (973) 751-4879 or Gabe Silberman at silberman@ieee.org.

## REGISTRATION: OBJECT-ORIENTED C++ PROGRAMMING

To: Mr. Naz Simonelli, 68 Woodmont Drive, Randolph, NJ 07869-3740 (Checks should be mailed to this address)

Name: / Mr. / Mrs. / Miss / Ms. / \_\_\_\_\_

☐ Non-member

 email address 

☐ 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**

Registration status will be mailed after Sept. 17, 1999. Phone inquiries concerning registration will NOT be honored. In general, the effective date of the application corresponds to the date when BOTH a fully completed application & payment are received.

☐ Tuition receipt will be mailed only if this box is checked

Signature: \_\_\_\_\_

# IEEE North Jersey Section Course

## Internet Programming/Web Application Development

Tuesday and Thursday Evenings, September 21 through October 21, 1999  
(September 21, 23, 28, 30, October 5, 7, 12, 14, 19, and 21)

GEC Marconi, 150 Parish Drive, Wayne, NJ  
(Checks **should not** be mailed to this address)

The IEEE is offering an evening course entitled "Internet Programming/Web Application Development." The course will run for 5 weeks with 2 sessions a week. Each session will run for 2 ½ hours with a short break approximately in the middle.

- ♦ Anyone who is interested in developing web sites
- ♦ Windows programmers making a transition to Internet technology
- ♦ Database personnel wanting to migrate to web development using web servers

### TOPICS

- ♦ *Fundamentals of Internet/Intranet*
- ♦ *HTML (HyperText Markup Language)*
- ♦ *FrontPage97/98 and other HTML editors*
- ♦ *Extensive use of Graphics/Image tools*
- ♦ *Integrate Multimedia in Web Pages*
- ♦ *Database Concepts - MS Access and MS SQLServer*
- ♦ *Database Integration with Web Applications*
- ♦ *Application Development: Introduction to JavaScript & VB Script*
- ♦ *Designing an Effective Web Site*

Class size will be limited to a maximum of 25 with a minimum of 15. Early registration is recommended. Phone reservations will NOT be accepted. Applications postmarked after Sept. 6<sup>th</sup> will require an additional late fee of \$25. No applications accepted after Sept. 10.

**WHERE:** GEC Marconi, 150 Parish Drive, Wayne, NJ. (Checks **should not** be mailed to this address)  
**WHEN:** Tuesdays and Thursdays: September 21 through October 21, 1999 - 6:30-9:00 PM  
**COST:** IEEE members \$295; Non-members \$395  
**CONTACT:** Bhanu Chivakula (973) 751-4879 or Gabe Silberman at (732) 463-6824 or silberman@ieee.org.

### REGISTRATION: Internet Programming/Web Application Development

To: Mr. Naz Simonelli, 68 Woodmont Drive, Randolph, NJ 07869-3740 (Checks **should be mailed to this address**)

Name: / Mr. / Mrs. / Miss / Ms. / \_\_\_\_\_

☐ Non-member

✉ email address ✉

☐ 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**

Registration status will be mailed after September 17, 1999. Phone inquiries concerning registration will NOT be honored. In general, the effective date of the application corresponds to the date when BOTH a fully completed application & payment are received.

☐ Tuition receipt will be mailed only if this box is checked

Signature: \_\_\_\_\_



100 Years ago, on September 30, 1899 at New Jersey's Twin Lights, an historic event occurred. On that day, Guglielmo Marconi conducted his now-famous radio transmission to a ship at sea. 10 years ago, David Goodman founded the Wireless Information Network Laboratory (WINLAB) at Rutgers University, dedicated to advancing the future of wireless communications.

## **Reserve Your Place NOW for the Celebration of these Two Special Anniversaries**

### **WINLAB'S 10<sup>TH</sup> AND MARCONI'S 100<sup>TH</sup> SEPTEMBER 30, 1999**

**“Wireless – Yesterday, Today and Tomorrow”**

Over the last 100 years, many great scientists and engineers have shaped the rich heritage of wireless communications. It is with great pleasure that we bring together six of these pioneers to share their perspectives on this historic day.

Fumiyuki Adachi  
Don Cox  
Dick Frenkiel

Larry Greenstein  
Bob Lucky  
Andy Viterbi

This event will be held at the Oyster Point Hotel in Red Bank, New Jersey and will begin at 7:30 AM with Continental Breakfast. The talks will begin at 8:00 AM, breaking for lunch at 12:00 PM and concluding at approximately 2:30 PM.

**“Twin Lights Festivities”**

Following the talks, guests will be invited to assemble at the Twin Lights Historic Park for a reenactment ceremony and reception. Attendees will experience a breathtaking view of Sandy Hook and distant New York Harbor. They will enjoy refreshments and hors d'oeuvres at the actual site of Marconi's famous transmission. The local chapter of the Ham Radio Club of America will display vintage radio equipment. We have invited dignitaries from government, industry and academe, including the Governor, the Italian Ambassador, and a member of the FCC to participate in this memorable event.

**“WINLAB Anniversary Celebration Dinner”**

The day will conclude with a river-view dinner to be held at Bahr's Restaurant in the town of Highlands beginning at 6:00 PM.

Come and join us in celebrating these memorable occasions. Attendance will be limited and reservations will be accepted on a first-come, first-served basis, so we ask you to reserve your spot as soon as possible. Registration and cost information can be found on the reverse side.



## Anniversary Celebrations September 30, 1999

### Registration Form

Name \_\_\_\_\_ Telephone \_\_\_\_\_  
Company \_\_\_\_\_ Fax \_\_\_\_\_  
Address \_\_\_\_\_ Email \_\_\_\_\_  
\_\_\_\_\_

Credit Card Information: (Check one) ☐ Visa ☐ MasterCard

Credit Card Number: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Payment of registration fees must accompany the registration form in order for it to be processed. Checks should be made payable to WINLAB/Rutgers University. Registration includes attendance at all talks, coffee breaks, lunch, Twin Lights reception and dinner.

Registration Fee: \$ 225.00 per person.

I will ☐ will not ☐ attend the lunch.

I will ☐ will not ☐ attend the Twin Lights reception.

I will ☐ will not ☐ attend the dinner.

Special dietary requests (if any) \_\_\_\_\_

---

---

### Hotel Information and Request Form\*\*

Oyster Point Hotel, Red Bank, New Jersey

A limited number of rooms will be available for attendees staying over on the evening of September 29, 1999. Guaranteed hotel reservations at the special reduced rate of \$130 per room per night will be available only until August 24, 1999. **Reservations must be made through the WINLAB office.**

Date of Arrival \_\_\_\_\_ Time of Arrival \_\_\_\_\_  
Date of Departure \_\_\_\_\_ Number of Adults \_\_\_\_\_  
Special Requests \_\_\_\_\_

Credit card information is required for hotel accommodations to be processed and guaranteed. Hotel cancellations must be made 24 hours in advance or you will be charged for the night.

\*\* Please fax or mail this form to:

Melissa Gelfman, Business Manager  
WINLAB/Rutgers University  
73 Brett Road  
Piscataway, NJ 08854-8060  
Telephone: 732-445-0283, Fax: 732-445-3693  
Email: gelfman@winlab.rutgers.edu